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IN THE

Supreme Court of the United States

OCTOBER TERM, 1996

TEXAS INSTRUMENTS INCORPORATED,

Petitioner,

v.

CYPRESS SEMICONDUCTOR CORPORATION,
LSI LOGIC CORPORATION, and
VLSI TECHNOLOGY, INC.,

Respondents.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

PETITION FOR A WRIT OF CERTIORARI

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QUESTION PRESENTED

Whether patent-infringement adjudications of the United States International Trade Commission are entitled to preclusive effect in subsequent district court patent-infringement litigation involving the same parties, the same accused processes, and the same claims of the same patent?

PARTIES TO THE PROCEEDINGS

The parties to the proceedings in the United States Court of Appeals for the Federal Circuit were Texas Instruments Incorporated, Cypress Semiconductor Corporation, LSI Logic Corporation, and VSLI Technology, Inc.

Pursuant to Supreme Court Rule 29.6, Petitioner Texas Instruments Incorporated states that it has no parent companies. Texas Instruments has two non-wholly owned subsidiaries: Texas Instruments-Samsung Electronico (Portugal Lda) and Texas Instruments-Acer Incorporated.

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PETITION FOR A WRIT OF CERTIORARI

Texas Instruments Incorporated ("TI") petitions for a writ of certiorari to review the judgment of the United States Court of Appeals for the Federal Circuit.

OPINIONS BELOW

The opinion of the United States Court of Appeals for the Federal Circuit is reported at 90 F.3d 1558, and is reprinted at pages 1a-23a of the appendix to this petition. The Order of the Federal Circuit denying TI's petition for rehearing and declining TI's suggestion for rehearing *in banc* is unreported; it is reprinted at page 93a of the appendix to this petition. The opinions of the United States District Court for the Northern District of Texas, one from 1992, and one from 1994, denying summary judgment to TI are unreported; they are reprinted at pages 24a-31a and 32a-39a of the appendix to this petition. The opinion and order of the United States District Court for the Northern District of Texas, granting the defendants' motion for judgment as a matter of law and overturning a jury verdict in TI's favor, is reported at 39 USPQ2d 1481, and is reprinted at pages 40a-64a of the appendix to this petition.

The Federal Circuit's decision in a prior case, affirming an International Trade Commission ("ITC") determination that the same defendants, using identical processes to produce identical products, had infringed the same TI patent at issue in this case, *Texas Instruments Incorporated v. USITC*, 988 F.2d 1165 (Fed. Cir. 1993), is reprinted at pages 40a-92a of the appendix to this petition.

JURISDICTION

The judgment of the United States Court of Appeals for the Federal Circuit was entered on July 19, 1996. A timely petition for rehearing in that court was denied on September 17, 1996. The jurisdiction of this Court is invoked under 28 U.S.C. § 1254.

STATUTORY PROVISIONS INVOLVED

Section 1337 of Title 19, United States Code is set forth at pages 94a-105a of the appendix to this petition.

INTRODUCTION

This case presents an important question concerning the preclusive effect to be given to adjudications of the United States International Trade Commission in later district court actions involving exactly the same parties and issues.

Both the ITC, which is an administrative agency, and the district courts have jurisdiction over issues of patent infringement. Contrary to decisions of this Court under other statutory provisions, and contrary to decisions of the First, Second, and Fourth Circuits under this very statute, the Court of Appeals for the Federal Circuit here held that adjudications of the ITC are not entitled to preclusive effect in later district court litigation. Neither the language nor structure of the statute, 19 U.S.C. § 1337 (1994), as amended by Pub. L. No. 104-295, 110 Stat. 3514 (1996), however, shows a Congressional intent to abrogate the usual common-law rules of *res judicata* and collateral estoppel, which promote the important interests of efficiency and finality.

The Federal Circuit's contrary decision was based solely on a snippet of language from the Senate Report to the Trade Act of 1974. That language is ambiguous at best, and wholly ungrounded in the text of 19 U.S.C. § 1337, but the Federal Circuit nevertheless read it as stating a Congressional intent to bar application of these common-law rules of preclusion. The Federal Circuit reached this result even though reliance on such textually unanchored legislative history to the exclusion of the text of the statute is strongly disfavored. *See Shannon v. United States*, 512 U.S. 573, 583 (1994) (noting that there is no case which gives "authoritative weight to a single passage of legislative history that is no way anchored to the text of the statute"). *See also Holder v. Hall*, 114 S.Ct. 2581, 2612 (1994) (Thomas, J., concurring) ("the 'authoritative source' for legislative intent [is] the text of the statute passed by both houses of Congress and presented to the President, not a series of partisan statements about purposes and objectives collected by congressional staffers and packaged into a Committee Report.").

The Federal Circuit's refusal to give a prior ITC decision preclusive effect in this case has produced two directly contradictory results. An adjudication in the earlier case before the ITC, affirmed by the Federal Circuit, determined that the respondents' processes and resulting products infringed TI's '027 patent. App. 65a-92a. In later district court litigation, affirmed by the Federal Circuit, the same thre companies, producing the identical articles by the same processes, were held *not* to infringe the same claims of that same TI patent. App. 40a-64a. In other words, the very processes and resulting products the ITC and Federal Circuit found to infringe TI's patent, and thus excluded from being imported into the United States, were found, in the subsequent district court and Federal Circuit decisions, not to infringe the very same claims of the very same patent. This dichotomy seriously undermines the goal of "uniformity in the treatment of a given patent," which was only recently reaffirmed in *Markman v. Westview Instruments, Inc.*, 116 S. Ct. 1384, 1396 (1996). Certiorari should be granted to address this important issue of federal law and procedure.

STATEMENT

Patent Litigation In The ITC

The ITC, formerly known as the United States Tariff Commission, was created in 1916. The Tariff Acts of 1922 and 1930 (ch. 356, 42 Stat. 858 and ch. 497, 46 Stat. 590) gave the Tariff Commission the power to exclude imported goods whenever the importer was adjudged guilty of "unfair methods of competition [or] unfair acts in the importation of articles." *See In re Northern Pigment Co.*, 71 F.2d 447, 453 (CCPA 1934). Even before 1930, the Commission and the courts had firmly established that an importer committed such an "unfair" act when he imported an article that infringed a United States patent. *See Frischer & Co. v. Bakelite Corp.*, 39 F.2d 247, 259 (CCPA), *cert. denied*, 282 U.S. 852 (1930); *Synthetic Phenolic Resin*, U.S.T.C. Investigation No. 316-4 (1927). Ever since, the ITC has been in the business of trying patent-infringement cases.

In 1974, Congress granted the Tariff Commission broader powers and renamed it the International Trade Commission. Trade Act of 1974, Pub. L. No. 93-618, 88 Stat. 1978 (codified as amended at 19 U.S.C. §§ 2101-2495 (1994)). One of the primary purposes of the Trade Act was to "improve procedures for responding to unfair trade practices in the United States and abroad." S. Rep. No. 1298, 93d Cong., 2d. Sess. 4 (1974), *reprinted in* 1974 U.S.C.C.A.N. 7186, 7187 (hereinafter "S. Rep. No. 1298").

The ITC is a typical administrative agency. It is authorized to investigate unfair trade practices, which are defined in 19 U.S.C. § 1337, in response to a private complaint (or, in some cases, *sua sponte*). 19 U.S.C. § 1337(b)(1). The ITC remedies violations of section 337 by "direct[ing] that the articles concerned . . . be excluded from entry into the United States," unless compelling national interests dictate otherwise. 19 U.S.C. § 1337(d).

Section 337 of the Tariff Act of 1930 (19 U.S.C. § 1337) sets forth several categories of unlawful acts of importation. In addition to the general power to remedy "[u]nfair methods of competition and unfair acts in the importation of articles" (19 U.S.C. § 1337(a)(1)(A)), the ITC is also charged with remedying several specific types of unfair acts of importation that injure United States industry, including: importation of articles that infringe United States patents (19 U.S.C. § 1337(a)(1)(B)(i),(ii)), copyrights (19 U.S.C. § 1337(a)(1)(B)(i)), and trademarks (19 U.S.C. § 1337(a)(1)(C)), as well as acts of importation that threaten to or do "restrain or monopolize trade and commerce in the United States" in violation of the antitrust laws. *See* 19 U.S.C. § 1337(a)(1)(A)(iii).

With respect to patents, the ITC has jurisdiction over cases where the complainant seeks to prohibit "[t]he importation into the United States, the sale for importation, or the sale within the United States after importation . . . of articles that . . . infringe a valid and enforceable United States patent . . . or . . . are made, produced, [or] processed . . . under, or by means of, a process covered by the claims of a valid and enforceable United

States patent." 19 U.S.C. § 1337(a)(1)(B). Thus, the ITC is frequently required to determine questions of patent infringement.

ITC exclusion actions are agency adjudications, which are in most respects identical to district court actions. Indeed, the ITC's procedural rules are virtually identical to those followed in the United States district courts. The ITC Adjudicative Procedures, 19 C.F.R. part 210 (1996), closely track the Federal Rules of Civil Procedure.[1] An ITC proceeding is commenced by the filing of a complaint, followed by the respondent's answer. 19 C.F.R. §§ 210.12, 210.13. Discovery in the ITC allows for depositions, interrogatories, requests for access, document production requests, subpoenas and protective orders, just as in the district courts. 19 C.F.R. §§ 210.27-210.34.

The trial at the ITC is presided over by an ALJ acting in accordance with the Administrative Procedure Act, 5 U.S.C. §§ 551-576, 701-706 (1994). When patents are at issue, the ITC hearing is functionally equivalent to a federal-court patent-infringement trial, with the same burdens and standards of proof. The complainant must prove that the imported articles in fact infringe the patents at issue, and the respondent defends by showing that the patent is not infringed, and/or that the patent is not valid or is unenforceable. 19 U.S.C. § 1337(a)(1)(B)(i), (ii). Just as in a district court in subsequent actions, the Trade Act authorizes the ITC to consider "[a]ll legal and equitable defenses" which may be raised, giving the ITC complete jurisdiction to consider the validity, enforceability, and infringement of patents brought before it. 19 U.S.C. § 1337(c).

After a hearing in front of the ALJ, the ALJ makes an "initial determination" regarding whether an unfair trade practice, meriting an "exclusion order," has occurred; in patent cases, this requires the ALJ to determine whether the respondents' products or processes infringe the petitioner's valid patent. 19 C.F.R.

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[1] *See* Rouse, *The Preclusive Effect of ITC Patent Fact Findings on Federal District Courts: A New Twist on* In Re Convertible Rowing Exerciser Patent Litigation, 27 Loy. L.A. L. Rev. 1417, 1424 (1994).

§ 210.42. This initial determination must include a reasoned opinion stating the ALJ's factual findings and legal conclusions, and the reasons therefor. 19 C.F.R. § 210.42(d). The ALJ, and ultimately the ITC, must follow federal-court patent-law precedents in making these determinations.[2]

A petition for review of the ALJ's initial determination may then be filed with the Commission itself pursuant to 19 C.F.R. § 210.43(a). The Commission may affirm the ALJ's determination, or reverse it in whole or in part. When the Commission makes a final determination that there has been a violation of 19 U.S.C. § 1337, notice of that determination is published in the Federal Register and transmitted to the President. 19 C.F.R. § 210.49(b). The decision, if not disapproved, becomes final. When the decision becomes final, it may be appealed to a federal appellate court.

Before the passage of the Federal Courts Improvement Act in 1982, however, appeals from final Commission determinations were taken to the Court of Customs and Patent Appeals ("CCPA"), unlike appeals from district-court patent-infringement actions, which were at that time taken to the regional circuits. In 1982, however, the CCPA and the Court of Claims were eliminated and Congress created the United States Court of Appeals for the Federal Circuit, a court with national jurisdiction over particular types of cases — including ITC and district court patent-infringement cases. As a result, appeals from final ITC patent-infringement determinations, like appeals from district court patent-infringement cases, are now taken to the Federal Circuit. 28 U.S.C. § 1295(a)(1), (6) (1994); 19 U.S.C. § 1337(c).

It is typical for a complainant in an ITC exclusion action to also simultaneously bring a patent infringement suit involving the

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[2] *See also* 1 H. Kaye, P. Plaia & M. Hertzberg, *International Trade Practice* § 5.03, at 5-6 (1981); Martin, *Preclusive Effect of Factual Determinations of the International Trade Commission with Regard to Patent Matters*, 62 U. Chi. L. Rev. 885, 906 (1995).

same articles in a United States district court. Only federal district courts can award monetary damages for infringement, while the only remedy the ITC can provide is exclusion of the infringing articles or a prohibition on sale after importation. *Compare* 35 U.S.C. § 284 (1994) *with* 19 U.S.C. § 1337(g). The ITC has jurisdiction to prohibit "the importation into the United States, the sale for importation, or the sale within the United States after importation" of goods that infringe (or which were made by a process that infringes) a United States patent (19 U.S.C. § 1337(a)(1)(B), while district courts have jurisdiction over infringement suits brought pursuant to 35 U.S.C. § 271(a), which defines patent infringement as "mak[ing], us[ing], offer[ing] to sell, or sell[ing] any patented invention, within the United States or import[ing] into the United States any patented invention during the term of the patent therefor." 35 U.S.C. § 271(a) (1994). *See also* 35 U.S.C. § 271(g). Thus, the sale of imported, infringing goods within the United States would constitute both an unfair trade practice under 19 U.S.C. § 1337, as well as patent infringement under 35 U.S.C. § 271(a).

Such "dual path" litigation of patent disputes is a recurring phenomenon, as approximately every third investigation before the ITC is accompanied by a patent-infringement suit in a federal district court.[3] Congress addressed this when it passed the Uruguay Round Agreements Act, Pub. L. No. 103-465, 108 Stat. 4809 (1994), a provision of which empowers a district court to stay its proceedings "with respect to any claim that involves the same issues involved in the proceeding before the Commission." 28 U.S.C. § 1659(a) (1994). Congress explained that this section was passed to "minimize duplication of proceedings between the ITC and Federal district courts."[4]

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[3] *See* Lupo, *Dual Path Litigation Before the International Trade Commission and the Federal Courts in Import Cases Involving U.S. Patents*, 22 Pat. L. Ann. 411, 413 n.6 (1984).

[4] H.R. Rep. No. 103-826(I), 103d Cong., 2d Sess. 1, 7 (1994), *reprinted in* 1994 U.S.C.C.A.N. 3773, 3779.

Because dual path proceedings before the ITC and the district courts are so common, and because ITC investigations typically are concluded before district court litigation, the question of the preclusive effect of ITC decisions arises frequently. The courts of appeals are uniform in giving preclusive effect to ITC decisions in antitrust, trademark, and other cases, but the Federal Circuit has denied such effect in patent cases.

There is no language in the statute, 19 U.S.C. § 1337, which provides that ITC patent or other determinations are not to be given preclusive effect in later district court proceedings. Three sentences in the Senate Report, however, state:

> [I]n patent-based cases, the Commission considers, for its own purposes under section 337, the status of imports with respect to the claims of U.S. patents. The Commission's findings neither purport to be, nor can they be, regarded as binding interpretations of the U.S. patent laws in particular factual contexts. Therefore, it seems clear that any disposition of a Commission action by a Federal Court should not have res judicata or collateral estoppel effect in cases before such courts.

S. Rep. No. 1298, *reprinted in* 1974 U.S.C.C.A.N. 7329.

This language may have resulted from a confusion between the doctrine of *stare decisis* and doctrines of preclusion. Some who testified before the Senate Committee[5] expressed concern that a "disposition of a Commission action by a Federal Court" should not become binding upon a district court because CCPA decisions were not binding precedent on either the district courts or the

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[5] *See Trade Reform Act of 1973: Hearings Before the Sen. Comm. on Finance on H.R. 10710*, 93d Cong., 2d Sess. 1999, 2012 (1974) (statement of Harvey Kaye and Paul Plaia, patent attorneys).

regional circuit courts of appeals — which had original and appellate jurisdiction over patent cases.[6]

Whatever the basis for such concerns, however, in 1982, both ITC determinations regarding patents and district court determinations regarding patents were made appealable to the newly created Court of Appeals for the Federal Circuit. *See* Federal Courts Improvement Act, Pub. L. No. 97-164, § 127(a), 96 Stat. 25, 37-38 (codified as amended at 28 U.S.C. § 1295 (1994)). Congress hoped that the Federal Courts Improvement Act would improve uniformity and consistency in the complex area of patent law, reduce "forum shopping" for a more favorable application of the patent laws, and alleviate the workloads of the regional courts of appeals. Martin, *Preclusive Effect of Factual Determinations of the International Trade Commission with Regard to Patent Matters*, 62 U. Chi. L. Rev. 885, 899-900 (1995).

TI's '027 Patent

United States Letters Patent No. 4,043,027 ("the '027 patent"), owned by TI, claims aspects of a low-cost, mass-production process for encapsulating semiconductors in plastic during manufacture. The '027 patent does not claim a process for making a semiconductor device itself; rather, that patent covers the process of assembling, and then packaging in a protective plastic, a finished semiconductor device. The '027 patent issued in 1977 and was the subject of both an ITC exclusion proceeding and a federal district court infringement action.

Proceedings Before the ITC

On July 9, 1990, TI instituted an ITC exclusion proceeding pursuant to 19 U.S.C. § 1337, against the same defendants involved here, Cypress Semiconductor Corporation, LSI Logic

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[6] *See, e.g., Plastic Contact Lens Co. v. Gottschalk*, 484 F.2d 837, 839 (D.C. Cir. 1973) ("neither this court nor the district court is bound by the decisions of the Court of Customs and Patent Appeals").

Corporation, and VLSI Technology, Inc.[7] In the ITC, TI alleged infringement of the '027 patent and sought to bar importation of the defendants' infringing products. On that same date, TI also filed this patent-infringement lawsuit in the United States District Court for the Northern District of Texas.

The ITC action was tried first, in a hearing that lasted from May 13, 1991, to May 23, 1991. In a 282-page decision filed on October 16, 1991, the ALJ concluded that the defendants' imported semiconductor devices had been made by a process that infringed claims 12 and 14 of the '027 patent, and thus recommended that the ITC issue an exclusion order against those articles.

This determination was affirmed by the Commission, and in February 1992, the ITC issued an exclusion order prohibiting the three companies from importing articles manufactured abroad by processes that infringed claims 12 and 14 of the '027 patent. App. 67a; *In re Certain Plastic Encapsulated Integrated Circuits*, Inv. No. 337-TA-315, USITC Pub. No. 2574 (Nov. 1992).

The defendants appealed the ITC's determination to the Federal Circuit, which affirmed the ITC's exclusion order in its entirety. That court construed the claims of the '027 patent *de novo* and held that substantial evidence supported the Commission's infringement determinations. App. 80a-83a.

Proceedings In The United States District Court

With the ITC action at an end, the district court infringement action began in earnest. Twice — once in 1992, after the ITC's final determination was issued, and once in 1994, after the Federal Circuit's affirmance — TI moved for summary judgment, both times on the ground that the ITC's determination of infringement should be entitled to preclusive effect. On both

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[7] Two other companies, Analog Devices, Inc. and Integrated Device Technology, were also named as respondents in the ITC action, but settled with TI before the district court trial.

occasions, the district court rejected TI's arguments, even though recognizing that the issue "has generated much controversy and commentary":

> The issue of whether a federal district court in a patent suit must afford preclusive effect to an ITC proceeding alleging unfair trade practices has generated much controversy and commentary. After an exhaustive review of the relevant case law and legal commentary, the Court remains of the opinion, as articulated previously in the August 6, 1992 Order denying summary judgment, that the ITC ruling should not be given preclusive effect in this case.

App. 36a-37a (citations and footnote omitted). The district court also noted that "[c]ommentators as well as courts have disagreed about whether ITC proceedings are entitled to preclusive effect in federal district court." App. 36a.[8]

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[8] The district court explained the "disagree[ment]":

> Some commentators argue that policy considerations warrant issue preclusion, but acknowledge that the district courts' exclusive jurisdiction over patent cases prevents the courts from applying issue preclusion based on ITC rulings. *See* J. Brian Kopp, Note, *In Re Convertible Rowing Exercise Patent Litigation: Should ITC Patent Decisions be Given Preclusive Effect in the District Courts?*, 24 Cornell Int'l L. J. 357 (1991); Michael A. Ritscher et al., *The Status of Dual Path Litigation in the ITC and the Courts: Issues of Jurisdiction, Res Judicata and Appellate Review*, 18 Am. Intell. Prop. L.Q.J. 155 (1990). These commentators advocate legislative action to change the district courts' exclusive jurisdiction over patent issues. Other commentators argue in favor of issue preclusion, and find no real jurisdictional bar to applying the doctrine. *See* Hal D. Baird, Note, *Res Judicata Effect of United States International Trade Commission Patent Decisions*, 6 B.Y.U. J. Pub. L. 127 (1992). Finally, some commentators argue that neither policy considerations underlying the doctrine of res judicata nor the jurisdictional scheme of the ITC and the district courts support affording preclusive effect to ITC rulings. *See* Robert G. Krupka et al., *Section 337 and the GATT: The Problem or the Solution?*, 42 Am. U. L. Rev. 779

At trial, which took place from April 17, 1995, to May 10, 1995, TI resubmitted all of the evidence it had previously put before the ITC as well as submitting additional evidence. Not only did the district court refuse to give the Federal Circuit and ITC determinations on the '027 patent any preclusive effect; it also refused to admit any evidence even referring to the prior ITC proceedings. App. 22a n.11. Even so, the jury — like the ITC before it — concluded that the three defendants had infringed claims 12 and 14 of the '027 patent. As damages for this infringement, and for infringement of another patent, the jury awarded TI $51.8 million.

After the verdict, however, the district court granted the defendants' motion for judgment as a matter of law ("JMOL"). Like the ITC before, the district court held that the defendants had not literally infringed claim 12 of the '027 patent. App. 47a-49a.

However, the district court, contrary to the ITC in the prior decision, held that the defendants had not infringed the '027 patent under the doctrine of equivalents, either. Although conceding that the trial evidence "arguably could support an alternative finding of infringement under the doctrine of equivalents," (App. 52a), and "may have been . . . sufficient to support a finding of equivalence" on claim 12, (App. 54a), the district court held that the evidence had not been presented to the jury in what it viewed to be a proper fashion — "it was presented as evidence of literal infringement," not as evidence of doctrine-of-equivalents infringement. App. 54a.

With respect to claim 14, the ITC and the district court reached different results simply by focusing on different language in that claim. The ITC and the Federal Circuit had earlier found

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(1993); Keith John Merritt, Comment, *Res Judicata Effects of Patent and Nonpatent Determinations Under Section 337 of the Tariff Act of 1930*, 15 N.C. J. Int'l L. & Com. Reg. 553 (1990).

App. 36a-37a n. 2.

that the die pad of the device "need not be aligned in a generally common plane in order to literally infringe claim 14" (App. 82a), and found claim 14 literally infringed. However, the district court here held claim 14 not literally infringed as a matter of law. The district court, focusing on different language in claim 14 than did the ITC, found that claim 14 required that "the entire [semiconductor] device" be mounted "*entirely* on one side of the plane formed by the conductors," and that a portion of the device was below the common plane. App. 49a-50a.

Thus, the district court departed from the original ITC determination, because (1) with respect to claim 12 the evidence of equivalence, in the court's view, had not been presented to the jury in a proper fashion, and (2) with respect to claim 14 the district court found that the claim language precluded the device from being located, even in part, below the common plane formed by the conductors.

The Federal Circuit's Decision

TI appealed the district court's judgment to the Federal Circuit, where a panel different from the one that heard the ITC appeal in 1993 was assigned to the case. The Federal Circuit affirmed the district court's judgment in its entirety, holding that the defendants' processes and resulting products did not infringe the '027 patent as a matter of law. App. 13a.

TI urged on appeal that the ITC's prior determination that the same defendants, producing the same products and utilizing the same processes, infringed the same '027 patent, should have been given preclusive effect. The Federal Circuit rejected that argument as well, holding that the ITC infringement determinations on the '027 patent were not entitled to preclusive effect. App. 19a-20a.

The Federal Circuit began its analysis on the preclusive effect issue by recognizing the general rule that "[t]he decision of an administrative agency may be given preclusive effect in a federal court when, as here, the agency acted in a judicial capacity. *See University of Tennessee v. Elliott*, 478 U.S. 788, 797-98 (1986);

United States v. Utah Constr. & Mining Co., 384 U.S. 394, 422 (1966)." App. 19a. However, the Federal Circuit held that this well-established rule did not apply to ITC patent determinations. App. 20a.

In reaching this conclusion, the Federal Circuit relied upon the three sentences of the Senate Report accompanying the Trade Act of 1974 quoted above at p. 8. Based upon that passage, the Federal Circuit held that "Congress did not intend decisions of the ITC on patent issues to have preclusive effect." App. 19a-20a. The Court of Appeals further concluded that "[r]ecent changes to ITC procedures and the formation of this court as the exclusive appellate court for patent cases, including ITC determinations, do not compel a different rule." App. 20a.

With regard to the merits of TI's infringement case, the Federal Circuit essentially tracked the analysis of the district court's JMOL opinion, as discussed above. App. 9a-18a. Like the district court, the Court of Appeals concluded that the defendants' encapsulation processes did not infringe the '027 patent either literally, or under the doctrine of equivalents. App. 12a-13a, 18a.

TI's timely petition for rehearing and suggestion of rehearing *in banc* was denied on September 17, 1996. App. 93a.

REASONS FOR GRANTING THE WRIT

This case presents important questions concerning the preclusive effect to be accorded patent-infringement decisions of the ITC in later district court actions involving the same patents, parties, and accused products and processes.

I. THE DECISION OF THE FEDERAL CIRCUIT CONFLICTS WITH DECISIONS OF THIS COURT, AND WITH DECISIONS OF THE FIRST, SECOND, AND FOURTH CIRCUITS

While purporting to follow this Court's jurisprudence, the decision of the Federal Circuit in fact squarely conflicts with this Court's decisions holding that agency adjudications should be granted preclusive effect in later district court or other proceedings involving the same parties and issues. While the Federal Circuit in prior cases had stated in *dictum* that ITC decisions in patent-based cases should not be given preclusive effect in later patent-infringement litigation,[9] that court has now ruled that ITC patent adjudications are not entitled to either *res judicata*[10] or collateral estoppel effect in subsequent patent-infringement suits. App. 18a.

Preclusion doctrines serve important interests in economy, efficiency and finality. Collateral estoppel, or issue preclusion, is normally applied to any issue of fact or law that has been litigated between two parties, or those in privity with the parties, and was necessary to the judgment. Similarly, *res judicata* effect is also given to dispositions of claims, even where the precise issue involved in later proceedings has not been litigated. *See, e.g.*, RESTATEMENT (SECOND) OF JUDGMENTS §§ 17, 27 (1982). These doctrines, which have long been a part of the common-law tradition in this country, prevent relitigation of issues and claims in later proceedings; their principal objective is the conservation of the parties' and the courts' resources. *See Blonder-Tongue Labs., Inc. v. University of Illinois Foundation*, 402 U.S. 313, 328-29 (1971).

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[9] *See, e.g., Texas Instruments Incorporated v. USITC*, 851 F.2d 342, 344 (Fed. Cir. 1988).

[10] *Bio-Technology General Corp. v. Genentech, Inc.*, 80 F.3d 1553, 1564 (Fed. Cir.), *cert. denied*, 117 S. Ct. 274 (1996).

These long-standing doctrines of preclusion have been extended by this Court to administrative agencies acting in a judicial capacity. In *United States v. Utah Construction & Mining Co.*, 384 U.S. 394 (1966), this Court first considered the preclusive effect to be given to administrative-agency adjudications — specifically, those made by the Advisory Board of Contract Appeals. Utah Construction entered into a contract to build a facility for the Atomic Energy Commission. After the project was complete, Utah Construction sought more time for performance under the contract's "changed conditions" clause. The Board authorized a time extension. *Id.* at 401. However, in the contractor's subsequent suit for breach of contract in the Court of Claims, that court refused to give effect to the time extension.

This Court reversed, holding that the Board's "findings . . . are conclusive on the parties . . . in the court suit for breach of contract and delay damages. This finality is required by . . . . the general principles of collateral estoppel." *Id.* at 418-19. This Court held that preclusion doctrines apply "[w]hen an administrative agency is acting in a judicial capacity and resolves disputed issues of fact properly before it which the parties have had an adequate opportunity to litigate." *Id.* at 422. There was "neither need nor justification for a second evidentiary hearing on these matters already resolved as between these two parties," since the Board was acting in a judicial capacity, and the parties had an opportunity to present their version of the facts and to receive review of those determinations. *Id.* This Court reasoned that application of preclusion doctrines "avoids a needless duplication of evidentiary hearings and a heavy additional burden in the time and expense required to bring litigation to an end, and it encourages the parties to make a complete disclosure at the administrative level, rather than holding evidence back for subsequent litigation." *Id.* at 420 (internal quotation, citations and footnote omitted).

Here, just as in *Utah Construction,* the same parties were involved in the administrative proceedings and the subsequent court action. The same claims of the same patent were at issue, and the same processes and resulting products were accused of

infringement, just as the same contract and claims were involved before the Board and in the later case in *Utah Construction*. Further, the ITC, like the Board in *Utah Construction*, was acting in a judicial capacity when it considered the claim of patent infringement. And just as there was no "need or justification for a second evidentiary hearing on . . . matters already resolved as between these two parties" in *Utah Construction*, there was no need for the district court to reconsider the issue of infringement of the '027 patent. The Federal Circuit's decision to the contrary thus conflicts with *Utah Construction*.

The Federal Circuit decision in this case also conflicts with this Court's decision in *University of Tennessee v. Elliott*, 478 U.S. 788 (1986). *Elliott* involved the discharge of a minority employee by the University of Tennessee. The employee sought administrative review of his discharge under Tennessee law, charging that the discharge was racially motivated. A hearing was held before a university ALJ. *Id.* at 790. Simultaneously, the employee had filed suit in federal district court alleging that his discharge was racially motivated and seeking relief under the Reconstruction civil rights statutes and under Title VII of the Civil Rights Act of 1964. *Id.* The administrative proceedings resulted in a judgment by the ALJ that the employee's discharge was not racially motivated. *Id.* at 791. The ALJ's judgment was affirmed by the University Vice President for Agriculture. *Id.* at 792. Although state court review was provided for, Elliott did not exercise this option, *id.*, but instead returned to the district court to litigate the issue anew in the Title VII action.

Relying on *Utah Construction*, this Court held that the administrative determination was entitled to preclusive effect. It again ruled that when an agency acting in a judicial capacity resolves disputed issues of fact before it that parties have had an adequate opportunity to litigate, federal courts must give the agency's decision the same preclusive effect to which it would be entitled in the state's courts. *Elliott*, 478 U.S. at 797-98. The Court saw "no reason to suppose that Congress, in enacting the Reconstruction civil rights statutes [such as 42 U.S.C. § 1983] wished to foreclose the adaptation of traditional principles of

preclusion to such subsequent developments as the burgeoning use of administrative adjudication in the 20th century." *Id.* at 797.

The conflict of the decision below with *Elliott* is plain. Just as the administrative determination in *Elliott* was granted preclusive effect, so here the ITC adjudication should have been granted preclusive effect. The parties here, as in *Elliott,* had an adequate opportunity to litigate contested factual issues. The "sound policy [of applying] principles of issue preclusion to the factfinding of administrative bodies acting in a judicial capacity" that governed in *Elliott,* 478 U.S. at 797, should also govern here. The decision below clearly conflicts with *Elliott.*

The decision below also conflicts with decisions of the First, Second and Fourth Circuits, each of which has held that ITC decisions under this very statute, 19 U.S.C. § 1337, are entitled to preclusive effect in subsequent district court actions. These decisions were neither cited nor discussed in the Federal Circuit's decision.

The First Circuit decision, *Aunyx Corp. v. Canon U.S.A., Inc.,* 978 F.2d 3 (1st Cir. 1992), *cert. denied,* 507 U.S. 973 (1993), held that ITC determinations in the antitrust area are entitled to preclusive effect in later district court proceedings involving the same claims. In *Aunyx,* the plaintiff (Aunyx) alleged that Canon had committed antitrust violations (an agreement to allocate markets) by limiting the amount of photocopier toner that Aunyx could buy in any given month. Aunyx pursued its claims simultaneously in the ITC and in the district court. *Id.* at 5. "The district court action was put 'on hold' awaiting the decision of the ITC." *Id.*

"The ITC's proceedings terminated in an order adverse to Aunyx." *Id.* When the district court proceedings resumed, the district court, while giving preclusive effect to some aspects of the ITC proceeding, declined to grant summary judgment on Aunyx's horizontal conspiracy claim, on the ground that the ITC proceedings had been litigated on a different legal theory. A jury rejected Aunyx's horizontal conspiracy claim after a six-day trial, and the court ordered judgment for Canon. *Id.* at 6.

On appeal, the First Circuit affirmed the judgment on the horizontal conspiracy count as *res judicata*. The First Circuit, relying on *Utah Construction* and *Elliott*, held that all requirements of *res judicata* were met: The unappealed ITC decision was final, the identity of the parties was the same in both actions, and the claims asserted in the district court and ITC actions "arose out of the same nucleus of operative fact." *Aunyx*, 978 F.2d at 7-8. By refusing to accord preclusive effect to a final ITC determination involving the same parties and the same nucleus of facts, the decision below conflicts with the First Circuit's *Aunyx* decision.

Similarly, the decision below also conflicts with the Second Circuit's decision in *Union Manufacturing Co., Inc. v. Han Baek Trading Co., Ltd.*, 763 F.2d 42 (2d Cir. 1985). The Second Circuit in *Union Manufacturing*, relying on *Utah Construction*, held that a prior section 337 proceeding in the ITC, involving claims of trademark violations, was entitled to preclusive effect in a later district court action. The Second Circuit stated that "[t]o hold otherwise would undermine the legitimacy of the ITC proceeding; the party losing the administrative adjudication could simply file an identical action in a federal district court." *Id.* at 45. The *Union Manufacturing* court explicitly recognized that the Federal Circuit had developed a conflicting rule for ITC patent determinations. *Id.* at 46.

The decision below also conflicts with a decision of the Fourth Circuit, which has held that ITC trademark decisions under section 337 must be accorded preclusive effect in later district court proceedings involving the same parties. *Baltimore Luggage Company v. Samsonite Corporation*, No. 91-2171, 1992 WL 296368 (4th Cir. Oct. 16, 1992). Just as in *Aunyx* and *Union Manufacturing*, the court in *Baltimore Luggage* held that ITC determinations in section 337 proceedings are entitled to preclusive effect in later district court proceedings. The Fourth Circuit explained that the ITC's administrative adjudication was entitled to preclusive effect in the later case because the ITC had the authority to decide the trademark claims, and because the ITC proceeding provided "a hearing, testimony, subpoenaed evidence,

argument and an opportunity to test any contention by confrontation." *Id.* at **3-**4. The contrary decision below clearly conflicts with *Baltimore Luggage*.

Finally, the Federal Circuit decision conflicts with the approach taken by the district court in Delaware in *In re Convertible Rowing Exerciser Patent Litigation*, 814 F. Supp. 1197 (D. Del. 1993). The *Convertible Rowing* court held that while *legal* determinations of the ITC may not be granted preclusive effect, *factual* findings relevant to patent validity *are* entitled to preclusive effect. *Id.* at 1204. Since patent infringement is a question of fact, *see Markman v. Westview Instruments, Inc.*, 116 S.Ct. 1384, 1392 (1996) (quoting *Winans v. Denmead*, 56 U.S. (15 How.) 330, 338 (1854)), the ITC's factual determination of infringement would be given preclusive effect in a later proceeding under the approach of *Convertible Rowing*. The approach taken by the Federal Circuit in this case cannot be reconciled with the district court's holding in *Convertible Rowing*.

The existence of a conflict on this issue, as well as the importance of the issue, is underscored by the numerous and conflicting views of commentators. As the district court noted in its 1994 summary judgment ruling, this issue "has generated much controversy and commentary" (App. 36a), and "[c]ommentators as well as courts have disagreed about whether ITC proceedings are entitled to preclusive effect in federal district court." App. 36a n.2. Indeed, if anything, the conflict among the commentators has only been exacerbated since that ruling.[11]

The Federal Circuit in this case offered no persuasive basis for distinguishing these conflicting cases. The Federal Circuit recognized the general proposition that Congressional statutes are

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[11] *See* Martin, *Preclusive Effect*, 62 U. Chi. L. Rev. 885 (arguing that courts should grant preclusive effect to ITC factual determinations involving patent issues); Rouse, *The Preclusive Effect of ITC Patent Fact Findings on Federal District Courts*, 27 Loy. L.A.L. Rev. 1417 (arguing for preclusive effect to be granted to ITC factual and legal determinations involving patents).

presumed not to override the common law — here the common law of issue preclusion — absent an indication that Congress intends to do so. *Isbrandtsen Co. Inc. v. Johnson,* 343 U.S. 779 (1952); *Astoria Federal Savings and Loan Association v. Solimino,* 501 U.S. 104 (1991). But the Federal Circuit concluded that Congress had intended to override the common-law preclusion doctrines with respect to ITC patent adjudications, relying solely on the three sentences from the Senate Report.

The Federal Circuit did not even address, much less distinguish, the decisions of the First, Second and Fourth Circuits holding that ITC section 337 decisions involving antitrust and trademark law are entitled to preclusive effect. Nor, for that matter, has the Federal Circuit suggested any rationale for treating ITC decisions in one area (*e.g.*, trademarks) differently than ITC decisions in another (*e.g.*, patents).

The decisions of this Court also cannot be distinguished based on the language of the Senate Report.

First, in contrast to the situation in *Astoria Federal Savings and Loan Ass'n v. Solimino,* 501 U.S. 104, where this Court found that the structure of the statute at issue barred preclusive effect, there is nothing in the language or structure of 19 U.S.C. § 1337 which supports the Federal Circuit's rejection of preclusive effect; indeed, the First, Second, and Fourth Circuits each analyzed precisely the same statutory structure (19 U.S.C. § 1337) and reached opposite conclusions from the Federal Circuit.

Second, another passage from the Senate Report, a passage on which respondents have previously relied, speaks generally of the preclusive effect of ITC decisions under section 337, and not merely patent decisions: "Under the Committee bill, decisions by the U.S. Court of Customs and Patent Appeals reviewing Commission decisions under section 337 should not serve as res judicata or collateral estoppel in matters where the U.S. District Courts have original jurisdiction." S. Rep. No. 1298, *reprinted in* 1974 U.S.C.C.A.N. 7212. Although "the U.S. District Courts have original jurisdiction" over antitrust and trademark actions as

well as patent actions,[12] the First, Second and Fourth Circuits have found that ITC decisions in those areas *are* entitled to preclusive effect.

Third, the language of the Senate Report relied upon by the Federal Circuit below is plainly inadequate to support the result that it reached. This Court has held that language in a single Committee report (the House Report was silent on the preclusive effect issue), not reflected in the language or structure of the statute itself, is an unreliable guide to Congressional intent. "Going behind the plain language of a statute in search of a possible contrary congressional intent is a 'step to be taken cautiously' even under the best of circumstances." *United States v. Locke,* 471 U.S. 84, 95-96 (1985) (internal quotation omitted). More specifically, this Court ruled in *Shannon v. United States,* 512 U.S. 573, 583 (1994), that "[w]e are not aware of any case . . . in which we have given authoritative weight to a single passage of legislative history that is in no way anchored in the text of the statute." Giving effect to the language of a single committee report is particularly inappropriate where, as here, Congress failed to adopt a specific legislative proposal that would have denied preclusive effect to decisions of the CCPA. *See Trade Reform of 1973: Hearings Before the Sen. Comm. on Finance on H.R. 10710,* 93d Cong., 2d Sess. 1999, 2002 (1974) (proposed amendment to section 337 to provide that "decisions of the C.C.P.A. shall not be held to be res judicata or collateral estoppel").

Fourth, this language from the Senate Report is ambiguous at best. It does not state explicitly that Congress intended to deny preclusive effect to ITC decisions in the patent area, but only predicts that the courts would reach that result ("it seems clear that any disposition . . . should not have *res judicata* or collateral estoppel effect"). Sen. Rep. No. 1298, *reprinted in* 1974

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[12] *See* 28 U.S.C. § 1338(a)(1994) (original federal jurisdiction over actions arising under patent, copyright and trademark laws); 28 U.S.C. § 1337(a) (1994) (original federal jurisdiction over antitrust actions).

U.S.C.C.A.N. 7329. Moreover, the language is ambiguous in other respects. It does not speak of the effect to be given to an ITC decision; instead, it speaks only of the effect to be given to "any disposition of a Commission action *by a federal court*." *Id.* (Emphasis added.) This language may simply reflect a concern that the review of ITC decisions by the CCPA, coupled with the review of district court patent decisions by the regional circuits, could have created an incoherent patchwork of precedent, and that CCPA decisions should not be binding in later court of appeals cases.

If this was the concern, it was eliminated by Congress in 1982 with the Federal Courts Improvement Act, which made the Federal Circuit the exclusive court of appeals for both ITC and district court patent decisions. Federal Courts Improvement Act of 1982, Pub. L. No. 97-164, § 127(a), 96 Stat. 37-38. Congress's principal rationale for creating the Federal Circuit was to "increas[e] uniformity" in the complex area of patent law. *Markman v. Westview Instruments, Inc.*, 116 S. Ct. at 1396. So, now that the same court of appeals oversees both the district courts and the ITC, there is no reason why a patent-law determination in one forum, subject to review by the Federal Circuit, should not be granted preclusive effect in the other forum, also subject to appellate review by the same court.[13]

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[13] Harvey Kaye and Paul Plaia, the patent practitioners whose testimony apparently spurred the inclusion of this language in the Senate Report, agree that

> [t]his [1982] change in the jurisdiction of the reviewing court in § 337 cases would seem to affect the status of appeals from such cases since the [Senate Report] does not appear to have been addressing the present status and jurisdiction of the ITC reviewing court. . . . the CAFC [Federal Circuit] and/or the district courts may soon use the principles of collateral estoppel under certain circumstances in patent-based § 337 decisions.

1 H. Kaye, *International Trade Practice*, § 11.19, at 1S-106 to 1S-107 (Supp. 1987).

Otherwise, the purpose of the Federal Courts Improvement Act, to create a uniform body of patent law, would be undermined. This Court has frequently recognized the need to harmonize such potentially conflicting federal statutes. *See Morton v. Mancari*, 417 U.S. 535, 550 (1974).

The result reached by the Federal Circuit seriously undermines this essential uniformity, and this very case is proof positive: The Federal Circuit has now concluded in one case that these defendants' encapsulation processes infringe claims 12 and 14 of the '027 patent — while in this case concluding that the same processes of the same defendants do not infringe those same claims of the same patent. It is hard to imagine a situation where there is greater lack of uniformity. Claim or issue preclusion would have avoided this blatantly inconsistent result, a result which denies the public reliable notice of the interpretation of patents. *Compare Markman*, 116 S. Ct. at 1396 (noting that "principles of issue preclusion would ordinarily foster uniformity" in the treatment of a given patent).

Finally, denying preclusive effect to ITC decisions would undermine the federal statutory scheme. As we discuss in Section II below, denying preclusive effect would undermine the function of the ITC and at a minimum lead to unnecessary and duplicative litigation. Moreover, in 1994 Congress specifically recognized the need to reconcile overlapping ITC and district court litigation: 28 U.S.C. § 1659(a) provides that district court actions presenting "any claim that involves the same issues involved in the proceeding before the [International Trade] Commission," may be stayed pending the outcome of the ITC case. Congress explained that this section was passed to "minimize duplication of proceedings between the ITC and the Federal district courts."[14]

This provision would be meaningless if the ITC action did not have any effect on the later district-court litigation; indeed, if ITC

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[14] H.R. Rep. No. 103-826(I), 103d Cong., 2d Sess. at 7, *reprinted in* 1994 U.S.C.C.A.N. 3779.

actions were meant to have no effect on later district court litigation, 28 U.S.C. § 1659(a) would have no apparent purpose other than to delay the district court action.

The decision below plainly conflicts with both decisions of this Court and of the First, Second and Fourth Circuits. Certiorari should be granted.

II. THE ISSUE PRESENTED BY THIS CASE IS RECURRING AND IMPORTANT

The issues presented here are both recurring and important. As trade becomes more and more international, and the volume of imports to the United States increases, issues of infringement of United States patents by foreign-made goods have become critical. The ITC plays an important role in protecting U.S. patent holders from the importation of infringing goods. Indeed, almost 90 percent of the section 337 actions filed in the ITC this year involve claims of patent infringement. *See Fed-Track Guide to Investigations of Unfair Trade Practice in the Import Trade* (1996). Almost a third of such cases are followed by patent-infringement suits in the district courts, involving the same parties, products or processes, and patents. Lupo, *Dual Path Litigation Before the International Trade Commission and the Federal Courts in Import Cases Involving U.S. Patents*, 22 Pat. L. Ann. 411, 413 n.6 (1984). The situation presented here, ITC patent-infringement adjudication followed by district court patent-infringement adjudication, is clearly destined to continue to recur with great frequency.

Not only is this issue recurring, it is important. *First*, given the stakes in patent infringement litigation, denying preclusive effect to ITC determinations, which usually precede district court litigation, will virtually guarantee duplicative litigation in the district courts. Thus, the issue here is important as a matter of economy and sound judicial administration. "[P]atent litigation is a very costly process," *Blonder-Tongue Labs., Inc. v. University of Illinois Foundation*, 402 U.S. at 334; indeed, Judge Frank once observed that litigating a patent suit can be a

"staggering" expense.[15] Even twenty-five years ago, when there was an "overwhelming tendency to try these suits without juries,"[16] this Court noted that "patent cases that go to trial seem to take an inordinate amount of trial time." *Blonder-Tongue*, 402 U.S. at 336-37. Now that most patent cases *are* tried to juries, patent litigation is even more expensive and time-consuming.

As Judge Easterbrook has noted in considering issues of collateral estoppel in patent litigation, "[p]atent litigation is costly . . . . [w]hy begin from scratch?" *Vas-Cath Inc. v. Mahurkar*, 745 F. Supp. 517, 525 (N.D. Ill. 1990) (Easterbrook, J.), *reversed on other grounds*, 935 F.3d 1555 (Fed. Cir. 1991). Costly, complicated, and lengthy patent litigation wastes the federal courts' precious resources, and it is critical — particularly in this area of the law — to apply traditional doctrines of preclusion in order to avoid "drain[ing] the resources of an adjudicatory system with disputes resisting resolution." *Solimino*, 501 U.S. at 108. *See also* Vestal, *Res Judicata/Preclusion by Judgment: The Law Applied in Federal Courts*, 66 Mich. L. Rev. 1723, 1724 (1968) ("Judges, overwhelmed by docket loads, are looking for devices to expedite their work. Preclusion offers an opportunity to eliminate litigation which is not necessary or desirable.").

Second, this issue is important as a matter of federal patent policy. The Constitutional genesis of the patent laws, Article I, section 8, provides that "[t]o promote the Progress of Science and useful Arts," Congress may "secur[e] for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." However, requiring patent holders to

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[15] *Picard v. United Aircraft Corp.*, 128 F.2d 632, 641 (2d Cir. 1942) (Frank, J., concurring), *cert. denied*, 317 U.S. 651 (1942).

[16] Which is no longer the case. *See Hilton Davis Chem. Co. v. Warner-Jenkinson Corp.*, 62 F.3d 1512, 1567 n. 19 (Fed. Cir. 1995) (*in banc*) (Nies, J., dissenting) ("fiscal years 1992-1994 saw 163 of 274 patent cases [59 percent] being tried to a jury"), *cert. granted*, 116 S. Ct. 1014 (1996).

try the same expensive and time-consuming patent case twice can only stall the "Progress of Science and useful Arts." If patent litigation becomes a war of attrition, the benefits of securing and enforcing a United States patent will diminish. The likely result will be less innovation: Moneys spent on litigation "could be put to better use, such as further research and development." *Blonder-Tongue,* 402 U.S. at 338. "If litigation squanders the returns to invention, we will have less innovation — a depressing thought, given the importance of invention to economic growth." *Vas-Cath, Inc. v. Mahurkar,* 745 F. Supp. at 525 (Easterbrook, J.).

Third, this issue is important as a matter of federal trade policy. To avoid the double cost of patent-infringement litigation when imported goods are at issue, patent holders may simply avoid bringing many exclusion actions in the ITC. Instead, patent holders will be encouraged to bring infringement suits solely in the federal district courts, where they can obtain both damages *and* injunctive relief, including an injunction prohibiting the importer from importing goods that infringe their U.S. patents.

If patent holders avoid the ITC in order to avoid duplicative litigation, this would seriously undermine the efficacy of the International Trade Commission as an effective instrument for furthering United States trade policy.

Certiorari should be granted.

CONCLUSION

The petition for certiorari should be granted.

Respectfully submitted,

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December 16, 1996

APPENDIX

**UNITED STATES COURT OF APPEALS,
FEDERAL CIRCUIT.**

**TEXAS INSTRUMENTS INCORPORATED,
Plaintiff-Appellant,**

v.

**CYPRESS SEMICONDUCTOR CORPORATION,
LSI Logic Corporation, and
VLSI Technology, Inc., Defendants-Appellees.
No. 96-1003.**

July 19, 1996.

Before RICH, MAYER, and LOURIE, Circuit Judges.

LOURIE, Circuit Judge.

Texas Instruments Incorporated ("TI") appeals from the final judgment of the United States District Court for the Northern District of Texas granting judgment as a matter of law to the defendants, Cypress Semiconductor Corporation, LSI Logic Corporation, and VLSI Technology, Inc., that they did not infringe TI's patents. *Texas Instruments Inc. v. Cypress Semiconductor Corp.*, Civ. No. 3-90-CV1590-H, 1995 WL 811944 (N.D.Tex. Sept. 6, 1995). We affirm.

BACKGROUND

TI is the assignee of U.S. Patents 3,716,764 and 4,043,027. These patents claim different aspects of a process for encapsulating electronic components in plastic. The '027 patent claims a transfer molding process for encapsulating a semiconductor device [40], also referred to as a semiconductor "die," in plastic without damaging the device [40] or the fine wires [52 and 54], referred to as "whisker" wires, that provide the electrical connections between the device [40] and metal leads [10, 12, and 14]. The metal leads [10, 12, and 14] permit connection from the device [40] to an external circuit. In the claimed process, the device

[40] and the whisker wires [52 and 54] are protected because the plastic is injected from a gate [88] located on the opposite side of the mold cavity [64 and 66] from the device [40] and the whisker wires [52 and 54]. Figure 5, as shown below, illustrates the claimed process.

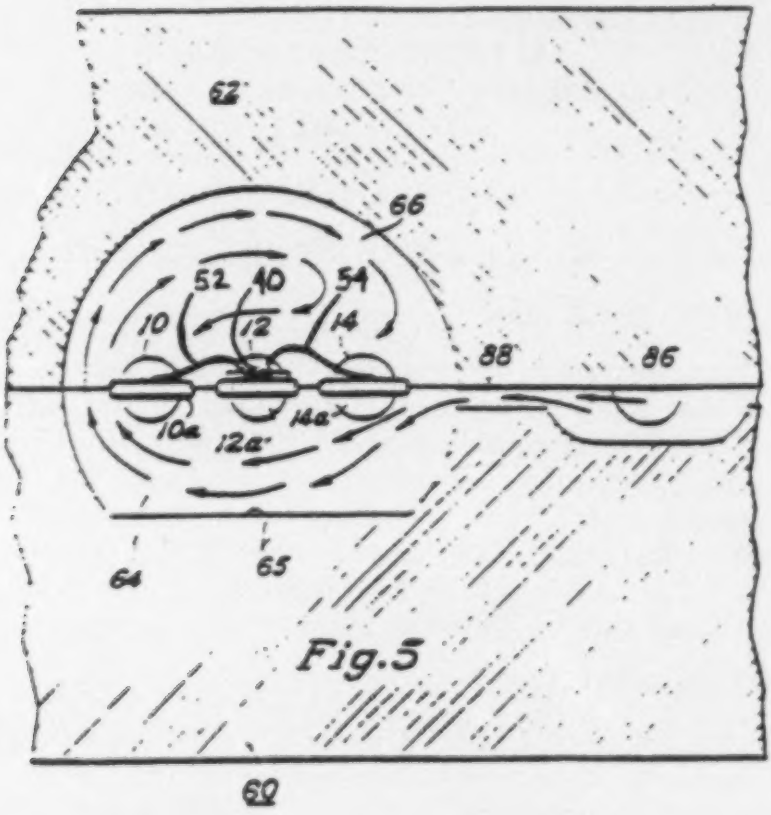


Fig.5

Claims 12 and 14, with reference numbers to figure 5 and emphasis added, are at issue on appeal.

12. The process for encapsulating a semiconductor device [40] comprising:

electrically connecting each of the electrical terminals of the device [40] to a conductor [10 and 14] and *mechanically attaching a portion of said device to at least one of the conductors [12] for support*;

disposing the conductors [10, 12, and 14] generally in a common plane;

disposing the device [40] and a major portion of the means for making electrical connection [52 and 54] between the terminals and the conductors generally on one side of the plane;

holding the ends of the conductors [10, 12, and 14] extending from the mold cavity [64 and 66] while injecting a fluid insulating material into the mold cavity on the other side of the plane [88] to subsequently solidify and embed said device [40], the fluid insulating material being injected into a portion of the cavity remote from the device [40] and the means electrically connecting the terminals of the device to the conductors [52 and 54], whereby the fluid will not directly engage the device [40] and electrical connection means [52 and 54] at high velocity, and the conductors will be secured against appreciable displacement by the fluid.

14. A process for encapsulating a semiconductor device [40] comprising:

providing electrical connections [52 and 54] between electrical terminals of the device and *a plurality of conductors [10, 12, and 14] arranged in a substantially common plane, said device [40] and the thusly provided electrical connections [52 and 54] thereto being disposed on one side of said plane*,

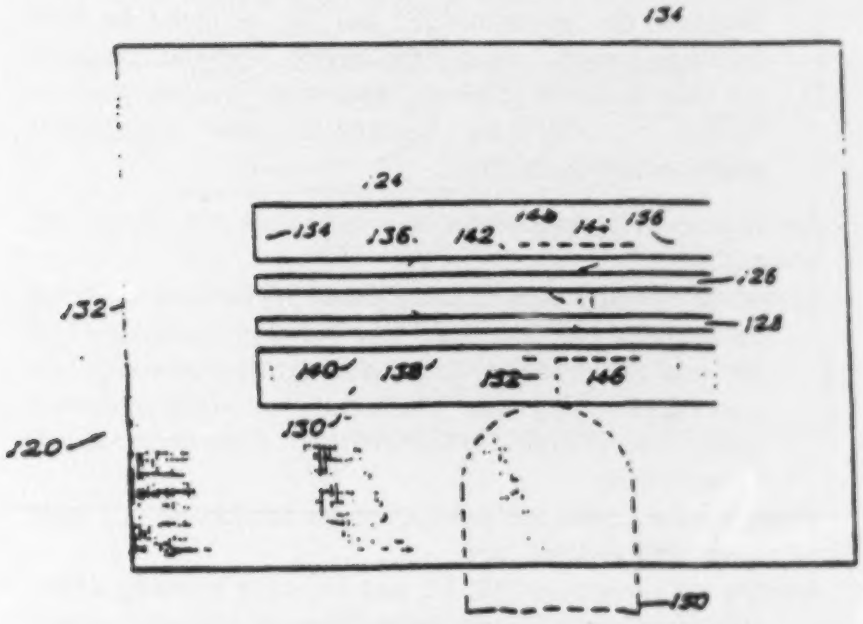
disposing the device and portions of the conductors in a mold cavity [64 and 66], and

holding the conductors [10, 12, and 14] while injecting a fluid insulating material into the mold cavity for subsequently solidifying and embedding said device,

the fluid insulating material being injected into a portion

of the cavity on the opposite side of said plane [88] to preclude direct high velocity engagement between the fluid and the device [40] and the electrical connections [52 and 54] thereto.

The '764 patent contains a specification identical to that of the '027 patent and claims the use of a lead frame [132] having conductor strips [136, 138, and 140] to support the device [142] during the transfer molding process.[1] After the semiconductor device [142] is encapsulated in plastic, the frame [132] is severed, leaving the conductor strips [136, 138, and 140] extending from the completed package in order to allow connection of the device [142] to an external circuit. Figure 9, as shown below, illustrates a metal lead frame as used in the claimed process.



[1] The '764 patent issued from a division of an application filed December 16, 1963. The '027 patent issued from a continuation of a division of

Claims 16, 17, and 19 of the '764 patent are at issue on appeal. Claim 16, with reference numbers to figure 9 and emphasis added, is representative of the '764 patent claims on appeal.[2]

16. A method for providing electrical connections to and encapsulating a semiconductor device [142] comprising the steps of:

(a) providing a substantially flat metal sheet [132] having recesses [124, 126, 128, and 130] therein which divide the sheet [132] into a plurality of conductor strips [136, 138, and 140 (corresponding to 10, 12, and 14 in figure 5)] which are spaced apart from one another for at least a major part of their lengths and which are joined together at at least one of their ends by at least one side piece which is spaced from a central region of the assembly, a plurality of the conductor strips [136, 138, and 140] extending from the side piece parallel to one another for at least part of their lengths;

(b) *conductively connecting one face of a semiconductor wafer [142] to one of said conductor strips [138 (corresponding to 12 in figure 5)] in the central region*;

(c) conductively connecting electrodes on the opposite face of the wafer to conductor strips [136 and 140] at the central region by separate lead wires [144 and 146 (corresponding to 52 and 54 in figure 5)];

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the same application filed on December 16, 1963. A third patent, U.S. Patent 3,439,238, issued on April 15, 1969 from the initial December 16, 1963 application. The claims of the '238 patent are directed to the improved semiconductor device resulting from the processes claimed in the '027 and '764 patents. The '238 patent is not at issue in these proceedings.

[2] Claims 17 and 19 depend from claim 16.

(d) enclosing the central region of the assembly in plastic insulating material to surround the wafer and lead wires and parts of the conductor strips; and

(e) severing the conductor strips at positions spaced from the central region to eliminate the remainder of the sheet [132] including the side piece.

Cypress Semiconductor Corporation, LSI Logic Corporation, and VLSI Technology, Inc. import and sell semiconductor devices. These devices are significantly more complicated than the devices shown in TI's patents due to advances in semiconductor technology. However, despite the advances in semiconductor technology, the defendants still encapsulate the devices using a transfer molding process.

In the accused transfer molding processes, the defendants employed a metal lead frame that differed from the one shown in TI's patents in that the semiconductor device was attached to the lead frame at a "die pad," not a conductor strip. The die pad supported the semiconductor device, but did not extend outside the completed encapsulated semiconductor device for connection to an external circuit. In addition, the die pad was situated 10-15 mils below the lead frame's conductor strips. The device was connected to the conductor strips via whisker wires. In the defendants' processes, the lead frame and the device were placed in a mold cavity and a fluid insulating material was injected into the mold cavity. The fluid was injected at a gate located on the opposite side of the lead frame from the semiconductor device and the whisker wires. After encapsulation, the lead frame was severed, leaving the conductor strips extending from the completed package for connection of the device to an external circuit.[3]

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[3] For a further discussion of the defendants' processes, *see Texas Instruments Inc. v. United States International Trade Commission*, 988 F.2d 1165, 1170, 26 USPQ2d 1018, 1022 (Fed. Cir. 1993).

On July 9, 1990, TI initiated an action under 19 U.S.C. § 1337 at the International Trade Commission ("ITC") against several semiconductor manufacturers, including all of the present defendants. TI alleged that these companies engaged in unfair methods of competition and unfair acts based on the importation and sale of encapsulated circuits produced by processes purportedly covered by claims 1, 12, 14, and 17 of the '027 patent. An administrative law judge ("ALJ") determined that claim 14 was literally infringed and that claim 12 was infringed under the doctrine of equivalents. Upon review of the ALJ's decision, the Commission agreed with the ALJ that claims 12 and 14 of the '027 patent were infringed, and it issued a limited exclusion order prohibiting the companies from importing integrated circuits manufactured abroad using any process covered by claims 12 and 14. *In re Certain Plastic Encapsulated Integrated Circuits*, Inv. No. 337-TA-315, USITC Pub. No. 2574 (Nov. 1992). On appeal, we construed the claims *de novo* and held that substantial evidence supported the Commission's infringement findings. Accordingly, we affirmed the ITC's determination and exclusion order. *Texas Instruments Inc. v. United States Int'l Trade Comm'n*, 988 F.2d 1165, 26 USPQ2d 1018 (Fed. Cir. 1993).

Contemporaneously with the ITC proceeding, TI sued the same companies in the Northern District of Texas, alleging infringement of both the '027 and '764 patents. After a 17-day trial that commenced on April 17, 1995, the jury returned a verdict finding that the defendants wilfully infringed claims 12 and 14 of the '027 patent and claims 16, 17, and 19 of the '764 patent. The jury did not specify whether it found literal infringement or infringement under the doctrine of equivalents. In addition, the jury awarded reasonable royalty damages to TI of more than $51 million. Despite the jury's verdict, the court granted, in part, the defendants' motion for judgment as a matter of law and set aside the verdict. *Texas Instruments Inc. v. Cypress Semiconductor Corp.*, Civ. No. 3-90-CV1590-H, 1995 WL 811944 (N.D.Tex. Sept. 6, 1995). In particular, the court determined that no reasonable jury could have found literal infringement of claim 12 of the '027

patent and claim 16 of the '764 patent because none of the defendants secured the semiconductor device to a "conductor" as required by the claims. In addition, the court found that TI did not prove literal infringement of claim 14 of the '027 patent because it failed to offer any evidence that the defendants placed the semiconductor device entirely on one side of the plane formed by the conductors during the process. As to infringement under the doctrine of equivalents, the court held that it could not uphold a finding of infringement because TI failed to provide particularized testimony and linking argument as required by our holding in *Lear Siegler, Inc. v. Sealy Mattress Co.*, 873 F.2d 1422, 10 USPQ2d 1767 (Fed. Cir. 1989). As an alternative to its grant of JMOL in favor of the defendants, the court conditionally, in the event we reversed its judgment, granted a new trial on infringement and damages on the ground that the jury failed to meaningfully deliberate. TI appeals.

DISCUSSION

When a party moves for JMOL in a case tried to a jury, we review the district court's decision *de novo* by reapplying the JMOL standard. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 975, 34 USPQ2d 1321, 1326 (Fed. Cir. 1995) (*in banc*), *aff'd*, __ U.S. __, 116 S.Ct. 1384, 134 L.Ed.2d 577, 38 USPQ2d 1461 (1996). Judgment as a matter of law against a party is appropriate when "a party has been fully heard on an issue and there is no legally sufficient evidentiary basis for a reasonable jury to find for that party on that issue." Fed.R.Civ.P. 50(a)(1). We review the legal standards that the jury applied in reaching its verdict to determine whether they were correct as a matter of law. *Markman*, 52 F.3d at 975, 34 USPQ2d at 1326. We review the jury's resolution of all factual disputes for substantial evidence. *Id.* Substantial evidence is "such relevant evidence from the record taken as a whole as might be accepted by a reasonable mind as adequate to support the finding under review." *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 893, 221 USPQ 669, 673 (Fed. Cir.), *cert. denied*, 469 U.S. 857, 105 S.Ct. 187, 83 L.Ed.2d 120 (1984).

A. Infringement

An infringement analysis requires two separate steps. First, the court must construe the claims asserted to be infringed as a matter of law in order to establish their meaning and scope. *Markman v. Westview Instruments, Inc.*, __ U.S. __, __, 116 S.Ct. 1384, 1393, 134 L.Ed.2d 577, 38 USPQ2d 1461, 1468 (1996). Second, the claims as construed are compared to the allegedly infringing device or process. *Id.* To literally infringe, the accused device or process must contain every limitation of the asserted claim. *See Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1535, 19 USPQ2d 1367, 1369 (Fed. Cir. 1991). Even if the accused device or process does not literally infringe, it may infringe under the doctrine of equivalents if the differences between the claimed invention and the accused device or process are "insubstantial." *Hilton Davis Chem. Co. v. Warner-Jenkinson Co.*, 62 F.3d 1512, 1518, 35 USPQ2d 1641, 1645 (Fed. Cir. 1995) (*in banc*) (*per curiam*), *cert. granted*, __ U.S. __, 116 S.Ct. 1014, 134 L.Ed.2d 95 (1996).

1. Literal Infringement

a. The "Connecting the Device to a Conductor" Limitation of Claim 12 of the '027 Patent and Claim 16 of the '764 Patent

Both parties agree that claim 12 of the '027 patent and claim 16 of the '764 patent require the semiconductor device to be connected to a "conductor."[4] The district court construed the term "conductor" to include "those portions of the [lead frame] assembly that extend from inside the package to the outside, and connect the semiconductor device to an external circuit. In other words, [conductors] are leads." *Texas Instruments Inc. v. Cypress Semiconductor Corp.*, Civ. No. 3-90-CV1590-H, slip op.

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[4] The process in claim 12 requires "mechanically attaching a portion of said device to at least one of the conductors for support." The process in claim 16 also requires "conductively connecting one face of a semiconductor wafer to one of said conductor strips in the central region."

at 10 n.6, 1995 WL 811944 (N.D.Tex. Sept. 6, 1995). On appeal, TI argues that the court misconstrued the term "conductor." In particular, TI asserts that a "conductor" encompasses any element capable of conducting electricity.

We disagree. Although the dictionary broadly defines "conductor" as any substance that conducts an electrical charge, the patent itself belies such a broad construction. *See Quantum Corp. v. Rodime, PLC*, 65 F.3d 1577, 1580, 36 USPQ2d 1162, 1165 (Fed. Cir. 1995) ("[T]he words of a claim will be given their ordinary meaning to one of skill in the art unless the inventor appeared to use them differently."), *cert. denied*, __ U.S. __, 116 S.Ct. 1567, 134 L.Ed.2d 666 (1996). Claim 12 states that the "ends of the conductors extend [ ] from the mold cavity" and are held during the encapsulation process. In addition, claim 16 requires "enclosing the . . . assembly in plastic insulating material to surround the [semiconductor device] and *parts of the conductor strips*." Thus, both claims indicate that a "conductor" for purposes of the invention extends beyond the plastic encapsulation. The specification further supports the district court's claim construction. Figure 8 of each patent illustrates the completed encapsulated semiconductor devices made by the claimed processes, with the conductors extending from the device. In discussing these completed devices, the specification states that "the respective conductor wires can subsequently be cut away to a customer's specification so that any arrangement of *leads* . . . can be provided for integration into substantially any circuit." '027 patent: Col. 7, 11. 3-7; '764 patent: Col. 6, 11. 54-58 (emphasis added). Thus, the patentee did not use the term "conductors" in the claims as the term is defined in the dictionary, *i.e.*, any structure capable of conducting electricity; instead, the patentee used the term in the claims to mean leads that "extend from inside the package to the outside, and connect the semiconductor device to an external circuit." *Texas Instruments*, slip op. at 10 n.6. The court did not err in so construing the claims.

TI asserts that even accepting the court's claim construction, it presented substantial evidence to support a finding of literal

infringement. TI argues that during the encapsulation processes used by the defendants, the semiconductor device was supported by the "die pad," which acted like a "conductor." TI relies on evidence that allegedly demonstrates that, during encapsulation, the semiconductor device was mechanically attached to the die pad with an electrically conductive adhesive; in turn, the die pad was connected through the lead frame to an external ground, forming a conductive, continuous current path from the die to ground. According to TI, this current path protected the die from static electricity during assembly and encapsulation. TI contends that the testimony of its expert witnesses supports this theory.

We have carefully considered TI's evidence that the die pad acted as a "conductor" during the defendants' encapsulation processes and we do not believe a reasonable jury could have found literal infringement based on this evidence. Although TI's experts testified that the die pads used by the defendants in their processes extended from inside the package to outside the package during encapsulation, TI failed to provide evidence that the defendants connected the die pad to an external circuit, as required by the claims. One of TI's experts, McAlexander, testified that "the die pad is a conductor, that it is capable of conducting current, and that it functions as a conductor." However, McAlexander's testimony was solicited based on TI's construction of the term "conductor" as meaning anything capable of conducting electricity. TI's attempts to recast the testimony to support a finding of infringement under the proper claim construction are to no avail. TI failed to present evidence that the defendants used a process in which the semiconductor device was connected to a conductor that extended from the device for connection to an external circuit, *i.e.*, that the device was connected to a lead.

Alternatively, TI argues that substantial evidence supports a finding of literal infringement of claims 12 and 16 because the die pad in the final packaged product acts as a "conductor" under the court's claim construction. We disagree. Although TI presented evidence that the defendants may have electrically connected the die pad to an external circuit in their final products, TI did not submit evidence establishing that the die pad itself extended

outside the package after manufacture as required by the claims. Instead, TI presented evidence that the die pad was connected *via a whisker wire* to a lead that extended outside the package for connection to an external circuit. Therefore, because the die pad itself did not extend from inside to outside the package in the final encapsulated product, no reasonable jury could have found that the die pad was a "conductor" in the accused processes. We thus agree with the district court's conclusion on the lack of literal infringement of claims 12 and 16.

b. The "Device Being Disposed on One Side of the Plane Formed by the Conductors" Limitation of Claim 14 of the '027 Patent

Although claim 14 of the '027 patent does not require "connecting the device to a conductor," the district court held that no reasonable jury could have found literal infringement of the claim because TI failed to offer any evidence that defendants' processes met the claim limitation requiring "a plurality of conductors arranged in a substantially common plane, said device and the thusly provided electrical connections thereto being disposed on one side of said plane." The court instructed the jury that this language requires that "the conductors must be on the same plane, except for minor deviations." The court further instructed the jury that the claims require placing "the entire device . . . *entirely* on one side of the plane formed by the conductors." On appeal, TI does not contest the court's instructions regarding this claim. Instead, TI argues that it presented evidence that the die pad was only slightly depressed from the conductors and therefore was in the "substantially common plane." Because the semiconductor device was entirely on one side of the die pad, TI asserts that substantial evidence supports the jury's verdict of infringement.

Neither party disputes that the "conductors" used in the defendants' processes were on the same plane except for minor deviations so as to form a "substantially common plane." TI presented no evidence, however, that the "substantially common plane" formed by these "conductors" extended below the die pad so that

the semiconductor device, when attached to the die pad, was entirely on one side of the plane formed by the conductors.[5] In fact, both parties agree that the defendants' die pads were depressed 10-15 mils below the "conductors." Therefore, the die pads were depressed 10-15 mils below the "substantially common plane" formed by these conductors. Because the semiconductor device was attached to the die pad below the substantially common plane formed by the conductors, the court properly determined that no reasonable jury could have found literal infringement of claim 14. Hence, we agree with the court's conclusion of lack of infringement with respect to claim 14 of the '027 patent.

2. The Doctrine of Equivalents

TI also argues that the district court erred in granting the defendants' JMOL motion because substantial evidence supports a finding of infringement under the doctrine of equivalents.[6] In particular, TI argues that the district court erred by requiring "particularized testimony and linking argument," as set forth in our decision in *Lear Siegler*, asserting that our recent *in banc* decision in *Hilton Davis* overruled *Lear Siegler*. Further, TI argues that even if our court did not eliminate this requirement in

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[5] As we construe these claims, the die pad does not constitute a "conductor" and therefore does not assist in forming the "substantially common plane" of conductors.

[6] TI further argues that the defendants' pre-verdict JMOL motion did not allege failure of TI's proof or argument concerning the doctrine of equivalents. Thus, under Federal Rules of Civil Procedure Rule 50, TI contends that the defendants failed to preserve the issue for purposes of the post-verdict JMOL motion. We rejected this argument in *Malta v. Schulmerich Carillons, Inc.*, 952 F.2d 1320, 21 USPQ2d 1161 (Fed. Cir. 1991), *cert. denied*, 504 U.S. 974, 112 S.Ct. 2942, 119 L.Ed.2d 566 (1992), where we held that an oral, pre-verdict motion requesting a directed verdict on the issue of noninfringement was sufficient to support a post-verdict motion concerning the doctrine of equivalents. 952 F.2d at 1324-25, 21 USPQ2d at 1164. We hold similarly here.

Hilton Davis, TI presented sufficient evidence to support the jury's verdict of infringement.

In *Hilton Davis*, we held that "the application of the doctrine of equivalents rests on the substantiality of the differences between the claimed and accused products or processes, assessed according to an objective standard." *Hilton Davis*, 62 F.3d at 1518, 35 USPQ2d at 1645. In doing so, we recognized that the function, way, result test applied in *Graver Tank & Mfg. Co., Inc. v. Linde Air Products Co.*, 339 U.S. 605, 70 S.Ct. 854, 94 L.Ed. 1097 (1950) often sufficed to show the substantiality of the differences. *Id.* However, we further acknowledged that the function, way, result test was not "the" sole test for equivalency. *Id.* Instead, we stated that other "objective evidence rather than unexplained subjective conclusions" may be relevant to the determination whether the differences between the accused product or process and the claimed invention are insubstantial. *Id.* at 1519, 35 USPQ2d at 1646 (emphasis added). Such evidence may include evidence of known interchangeability to one of ordinary skill in the art, copying, and designing around. Thus, we recognized that the doctrine of equivalents was "not the prisoner of a formula" and "the available relevant evidence may vary from case to case." *Id.* at 1518, 35 USPQ2d at 1645.

However, we further stated that "[the *Hilton Davis*] case presents an opportunity to restate — not to revise — the test for infringement under the doctrine of equivalents." *Id.* at 1516, 35 USPQ2d at 1644. Consequently, we did not, as the defendants contend, overrule our prior decisions that addressed the specific evidentiary requirements necessary to prove infringement under the doctrine of equivalents. In particular, we did not eliminate the need to prove equivalency on a limitation-by-limitation basis. *See Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 935, 4 USPQ2d 1737, 1739-40 (Fed. Cir. 1987) (*in banc*), *cert.*

denied, 485 U.S. 961, 108 S.Ct. 1226, 99 L.Ed.2d 426 (1988);[7] *see also Athletic Alternatives, Inc. v. Prince Mfg., Inc.*, 73 F.3d 1573, 1582, 37 USPQ2d 1365, 1373 (Fed. Cir. 1996) (applying the *Pennwalt* rule after our *in banc* decision in *Hilton Davis*). Nor did we overrule precedent requiring equivalency to be proven with "particularized testimony and linking argument." *See Lear Siegler, Inc. v. Sealy Mattress Co.*, 873 F.2d 1422, 10 USPQ2d 1767 (Fed. Cir. 1989); *Malta v. Schulmerich Carillons, Inc.*, 952 F.2d 1320, 21 USPQ2d 1161 (Fed. Cir. 1991), *cert. denied*, 504 U.S. 974, 112 S.Ct. 2942, 119 L.Ed.2d 566 (1992). The majority opinion in *Hilton Davis* does not cite or even discuss *Malta* or *Lear Siegler*. Our court set forth these evidentiary requirements in those earlier cases because, although the standard for infringement under the doctrine of equivalents is simple to articulate, it is conceptually difficult to apply. These evidentiary requirements assure that the fact-finder does not, "under the guise of applying the doctrine of equivalents, erase a plethora of meaningful structural and functional limitations of the claim on which the public is entitled to rely in avoiding infringement." *Pennwalt*, 833 F.2d at 935, 4 USPQ2d at 1739 (quoting *Perkin-Elmer Corp. v. Westinghouse Elec. Corp.*, 822 F.2d 1528, 3 USPQ2d 1321 (Fed. Cir. 1987)). Moreover, without these requirements, the fact-finder has no analytical framework for making its decision and is "put to sea without guiding charts when called upon to determine infringement under the doctrine [of equivalents]." *Lear Siegler*, 873 F.2d at 1426, 10 USPQ2d at 1770. In addition, we, as the reviewing court, would lack the assurance that the jury was fully presented with a basis for applying the doctrine of equivalents.

Hence, the district court properly determined that our decision in *Hilton Davis* did not overrule *Lear Siegler*. Pursuant to our precedent, a patentee must still provide particularized testimony and linking argument as to the "insubstantiality of the differences"

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[7] In fact, the majority opinion in *Hilton Davis* cites *Pennwalt* on several occasions as support for the "insubstantial differences" standard. *E.g.*, *Hilton Davis*, 62 F.3d at 1517, 35 USPQ2d at 1645.

between the claimed invention and the accused device or process, or with respect to the function, way, result test when such evidence is presented to support a finding of infringement under the doctrine of equivalents. Such evidence must be presented on a limitation-by-limitation basis. Generalized testimony as to the overall similarity between the claims and the accused infringer's product or process will not suffice.

TI argues that a recent panel decision from this court supports its argument that the *in banc* decision in *Hilton Davis* overruled *Lear Siegler*. In *National Presto Industries Inc. v. West Bend Co.*, 76 F.3d 1185, 37 USPQ2d 1685 (Fed. Cir. 1996), a panel of this court stated that "The court's *en banc* decision in *Hilton Davis* made clear that no specific formulation of evidence and argument is required. . . . [I]ndeed, neither *Lear-Siegler* nor *Malta* requires any particular formulation." 76 F.3d at 1191, 37 USPQ2d at 1688.

To the extent that *National Presto* decided that particularized testimony and linking argument as to each prong of the function, way, result test was not required in that particular case, it is not the province of this panel to second guess it. However, *National Presto* did not hold that particularized testimony and linking argument cannot generally be required in a doctrine of equivalents analysis, because it cannot overrule the prior panel decisions in *Lear Siegler and Malta*. *Newell Cos., Inc. v. Kenney Mfg. Co.*, 864 F.2d 757, 765, 9 USPQ2d 1417, 1423 (Fed. Cir. 1988) ("This court has adopted the rule that prior decisions of a panel of the court are binding precedent on subsequent panels unless and until overturned *in banc.*"), *cert. denied*, 493 U.S. 814, 110 S.Ct. 62, 107 L.Ed.2d 30 (1989). As demonstrated above, our decision in *Hilton Davis* is not to the contrary. Thus, particularized testimony and linking argument are still important in a jury case.

Here, we agree with the district court that TI failed to present sufficient evidence to support a finding of infringement under the

doctrine of equivalents.[8] TI attempts to support the jury's verdict with the testimony of its two expert witnesses, McAlexander and Seiling. The overwhelming majority of McAlexander's testimony, however, was solicited for purposes of establishing literal infringement under TI's improper interpretation of the term "conductor"; it did not purport to and therefore was insufficient to establish infringement under the doctrine of equivalents. *See Lear Siegler*, 873 F.2d at 1425, 10 USPQ2d at 1770 ("The evidence and argument on the doctrine of equivalents cannot merely be subsumed in plaintiff's case of literal infringement."). In addition, McAlexander's testimony that the "conductors" in the accused processes and the claimed processes were the "same" and performed the "same function" was merely generalized testimony as to overall similarity. Thus, he did not provide particularized testimony regarding the equivalency of the claim limitations in dispute, and his testimony cannot support a finding that the differences were "insubstantial."

Seiling's testimony also was insufficient. Seiling testified, in conclusive fashion, that the accused processes, under the proper claim construction, met the *Graver Tank* function, way, result test. However, his testimony was insufficient because, as the district court stated, "[t]here [was] no discussion of whether or how the way the die pad operates [was] similar to the patent claim, nor [was] there any particularized testimony explaining why the function and result [were] the same, especially with respect to the conductive function of the conductor in the patent." *Texas Instruments Inc. v. Cypress Semiconductor Corp.*, Civ. No.

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[8] In this case, the court charged the jury only as to the function, way, result test for purposes of finding infringement under the doctrine of equivalents. In particular, the instruction provided: To find that Cypress, LSI and VLSI infringed the '027 or '764 patents under the doctrine of equivalents, you must find that Cypress, LSI and VLSI's processes perform substantially the same function, in substantially the same way, to produce substantially the same results as the elements recited in the corresponding claim of the '027 or '764 patent.

3-90-CV1590-H, slip op. at 17, 1995 WL 811944 (N.D.Tex. Sept. 6, 1995).

In sum, we agree with the district court that TI failed to present evidence sufficient to support a finding of infringement under the doctrine of equivalents. Therefore, we affirm the court's grant of JMOL on this issue.

B. Issue Preclusion

TI next argues that the ITC's previous finding that the same defendants, using the same processes, infringed claims 12 and 14 of the '027 patent, and that our subsequent affirmance of that determination should be given preclusive effect. *See In re Certain Plastic Encapsulated Integrated Circuits*, Inv. No. 337-TA-315, USITC Pub. No. 2574 (Nov. 1992), *aff'd, Texas Instruments Inc. v. United States Int'l Trade Comm'n*, 988 F.2d 1165, 26 USPQ2d 1018 (Fed. Cir. 1993). In support, TI contends that preclusive effect is properly given to determinations made in a federal agency's adjudicatory capacity. TI also asserts that the district court erred in failing to permit the jury to be informed of the prior ITC holding.

The doctrine of issue preclusion[9] (or collateral estoppel) has been defined to mean that "[w]hen an issue of fact or law is actually litigated and determined by a valid and final judgment, and the determination is essential to the judgment, the determination is conclusive in a subsequent action between the parties, whether on the same or a different claim." RESTATEMENT (SECOND) OF JUDGMENTS § 27 (1982). The purpose of the doctrine is to "relieve parties of the cost and vexation of multiple lawsuits, conserve judicial resources, and, by preventing inconsis-

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[9] Our analysis here is limited to the doctrine of issue preclusion. We recently held that an ITC's prior decision concerning patent infringement or validity cannot have claim preclusive effect in district courts. *Bio-Technology General Corp. v. Genentech, Inc.*, 80 F.3d 1553, 38 USPQ2d 1321 (Fed. Cir. 1996).

tent decisions, encourage reliance on adjudication." *Allen v. McCurry*, 449 U.S. 90, 94, 101 S.Ct. 411, 415, 66 L.Ed.2d 308 (1980). The decision of an administrative agency may be given preclusive effect in a federal court when, as here, the agency acted in a judicial capacity. *See University of Tennessee v. Elliott*, 478 U.S. 788, 797-98, 106 S.Ct. 3220, 3225-26, 92 L.Ed.2d 635 (1986); *United States v. Utah Constr. & Mining Co.*, 384 U.S. 394, 422, 86 S.Ct. 1545, 1560, 16 L.Ed.2d 642 (1966). However, an administrative agency decision, issued pursuant to a statute, cannot have preclusive effect when Congress, either expressly or impliedly, indicated that it intended otherwise. *Astoria Fed. Sav. & Loan Ass'n v. Solimino*, 501 U.S. 104, 110, 111 S.Ct. 2166, 2170-71, 115 L.Ed.2d 96 (1991).

Here, the administrative proceedings were commenced before the ITC under section 337, as amended, of the Tariff Act of 1930. 19 U.S.C. § 1337 (1994). In 1974, Congress passed the Trade Reform Act of 1974, amending the Tariff Act of 1930 to allow respondents in ITC proceedings to plead, and the ITC to consider, all legal and equitable defenses, including patent invalidity and unenforceability. *See Lannom Mfg. Co. v. United States Int'l Trade Comm'n*, 799 F.2d 1572, 1576-79, 231 USPQ 32, 35-36 (Fed. Cir. 1986) (discussing the Trade Reform Act of 1974). In authorizing the Commission to consider these defenses, Congress cautioned that:

> [I]n patent-based cases, the Commission considers, for its own purposes under section 337, the status of imports with respect to the claims of U.S. patents. The Commission's findings neither purport to be, nor can they be, regarded as binding interpretations of the U.S. patent laws in particular factual contexts. Therefore, it seems clear that any disposition of a Commission action by a Federal Court should not have res judicata or collateral estoppel effect in cases before such courts.

S.REP. NO. 1298, 93d Cong., 2d Sess. 196 (1974), *reprinted in* 1974 U.S.C.C.A.N. 7186, 7329. Based on this legislative history, we have stated that Congress did not intend decisions of

the ITC on patent issues to have preclusive effect. *See Tandon Corp. v. United States Int'l Trade Comm'n*, 831 F.2d 1017, 1019, 4 USPQ2d 1283, 1285 (Fed. Cir. 1987) ("[O]ur appellate treatment of decisions of the Commission does not estop fresh consideration by other tribunals."). *See also Texas Instruments Inc. v. United States Int'l Trade Comm'n*, 851 F.2d 342, 344, 7 USPQ2d 1509, 1510 (Fed. Cir. 1988) (stating that ITC determinations regarding patent issues should be given no collateral estoppel effect); *Corning Glass Works v. United States Int'l Trade Comm'n*, 799 F.2d 1559, 1570 n.12, 230 USPQ 822, 830 n.12 (Fed. Cir. 1986) (stating that the legislative history of the Trade Reform Act of 1974 supports the position that ITC decisions have no preclusive effect in district courts).

Recent changes to ITC procedures and the formation of this court as the exclusive appellate court for patent cases, including ITC determinations, do not compel a different rule. *See* Federal Courts Improvement Act of 1982, Pub.L. No. 97-164, 96 Stat. 25 (granting appellate jurisdiction to the Federal Circuit in appeals from the ITC and district court patent cases) (codified at 28 U.S.C. § 1295); Omnibus Trade and Competitiveness Act of 1988, Pub.L. No. 100-418, 102 Stat. 1107 (1988) (modifying ITC procedures) (codified at 19 U.S.C. § 1337); Uraguay Round Agreements Act, Pub.L. No. 103-465, 108 Stat. 4809 (1994) (removing strict statutory time limits for ITC determinations) (codified at 19 U.S.C. § 1337). While those changes have modified some ITC procedures and provided the ITC with the same appellate court of review as that of district courts deciding patent issues, none of these statutory amendments or their legislative histories dealt with the possible preclusive effect of ITC determinations or indicated an intent contrary to Congress's stated intention in 1974. Thus, the rule that decisions of the ITC involving patent issues have no preclusive effect in other forums has not changed.[10]

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[10] Moreover, allowing prior ITC decisions on patent infringement questions to have preclusive effect would potentially deprive the parties of their Seventh Amendment right to a jury trial on the issue of

TI also argues that by our denying preclusive effect to ITC determinations and to our decisions in appeals from ITC decisions, district courts would be free to ignore our decisions. That is not correct. District courts are not free to ignore holdings of this court that bear on cases before them. Subsequent panels of this court are similarly not free to ignore precedents set by prior panels of the court.

However, once we accept, as we have done at least since 1986, that ITC decisions are not binding on district courts in subsequent cases brought before them, it necessarily follows that accused infringers can raise whatever defenses they believe are justified, regardless whether they previously raised them and lost in the ITC. The district court can attribute whatever persuasive value to the prior ITC decision that it considers justified. And we, on appeal, must be free to thoroughly review the district court's decision. As a court we are bound to follow our own precedents, and, to the extent that we have previously ruled on a matter, a subsequent panel will have powerful incentives not to deviate from that prior holding, short of thoroughly justified grounds.

In this case, our construction of the term "conductor" is in fact consistent with the ITC's construction of the term and is consistent with our decision affirming the ITC's determination. *See In re Certain Plastic Encapsulated Integrated Circuits*, Inv. No. 337-TA-31 at *8-12, *38-39 (Oct. 16, 1991) (initial determination). Moreover, our construction of the limitation in claim 14 requiring the device to be disposed entirely on one side of the plane formed by the conductors was not the subject of a holding by either the ITC or the prior Federal Circuit panel; the parties did not litigate this claim construction issue in the prior proceed-

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infringement. *But cf. Parklane Hosiery Co. v. Shore*, 439 U.S. 322, 335-37, 99 S.Ct. 645, 653-55, 58 L.Ed.2d 552 (1979) (application of collateral estoppel to a legal action based on an equitable determination does not violate Seventh Amendment right to a jury trial).

ing. Thus, no holding in the prior ITC case or its affirmance by our court precludes our affirmance of the district court here.[11]

In conclusion, this case has presented a fairly uncommon situation of a trial judge overriding a jury verdict in a patent case, following an earlier ITC decision on some of the same subject matter. Although we have been mindful of the deference accorded to a jury on fact findings, as the trial judge surely was, we have felt it necessary to affirm the district court's judgment. The trial judge did a careful and thorough job of analyzing the case. His factual and legal analyses fully support his decision. He observed the jury and believed that it lacked a grasp of the issues before it. The judge was convinced that the jury failed to meaningfully deliberate on the case. Under these circumstances, our duty to affirm is clear.

CONCLUSION

We affirm the district court's grant of JMOL on the issue of literal infringement. We affirm the district court's decision that the defendants did not infringe under the doctrine of equivalents because TI failed to provide "particularized testimony and linking argument" as required by our decision in *Lear Siegler, Inc. v. Sealy Mattress Co.*, 873 F.2d 1422, 10 USPQ2d 1767 (Fed. Cir.

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[11] In view of our determination that the ITC decision does not control this case, we conclude that the district court did not err in its decision not to inform the jury of that decision. *See Mendenhall v. Cedarapids, Inc.*, 5 F.3d 1557, 1566-75, 28 USPQ2d 1081, 1089-97 (Fed. Cir. 1993) (affirming the trial judge's exclusion of evidence concerning other litigation involving the same patents), *cert. denied*, __ U.S. __, 114 S.Ct. 1540, 128 L.Ed.2d 192 (1994).

1989). We also conclude that the court correctly denied preclu- sive effect to the prior ITC determination involving one of the patents in this case.

The parties shall bear their respective costs.

AFFIRMED.

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF TEXAS
DALLAS DIVISION

TEXAS INSTRUMENTS, INC.,	*	
	*	
Plaintiff,	*	
	*	
v.	*	Civil Action
	*	No. 3-90-1590-H
	*	
ANALOG DEVICES, INC., CYPRESS	*	
SEMICONDUCTOR CORPORATION,	*	
INTEGRATED DEVICE TECHNOLOGY,	*	
INC., LSI LOGIC CORPORATION,	*	
and VLSI TECHNOLOGY, INC.,	*	
Defendants.	*	

MEMORANDUM OPINION AND ORDER

This is a patent infringement case. At issue are two patents for which Plaintiff Texas Instruments, Inc. ("TI"), is assignee, No.'s 3,716,764 ("'764 patent") and 4,043,027 ("'027 patent").[1] TI alleges that all Defendants infringer certain claims within the '764 and '027 patents in violation of 35 U.S.C. § 271.

Before the Court now are three overlapping motions for summary judgment on the '027 patents, which are documented by the following instruments:

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[1] All issues regarding a third patent, No. 4,410,987 have been adjudicated. *See* Judgment, filed July 16, 1992. All claims based on a fourth patent, Patent No. 4,884,270, were dismissed by Stipulation and Order for Dismissal of Claims and Counterclaims Concerning United States Patent No. 4,844,270, filed July 24, 1991.

1.) TI's Renewed Motion for Summary Judgment on the '027 patent, filed April 8, 1992; the California Defendants'[2] Response thereto, filed April 21, 1992; Defendant Analog Devices, Inc.'s ("Analog") Memorandum in Opposition, filed April 21, 1992; and TI's Reply, filed May 1, 1992;

2.) The California Defendants' Motion for Partial Summary Judgment, filed April 8, 1992; TI's Opposition thereto, filed April 21, 1992; and the California Defendants' Reply, filed May 1, 1992;

3.) Analog's Consolidated Motion for Summary Judgment, filed April 8, 1992; TI's Memorandum in Opposition thereto, filed April 21, 1992; and Analog's Reply, filed May 1, 1992.

BACKGROUND OF THE CASE

TI produces among other things, electronic circuits. Many such circuits are very small "semiconductors." Certain semiconductors are attached to larger conductors, which, in turn, are inserted into circuit boards, the integral components of computers and their ilk. To protect the semiconductors and the tiny "whisker" wires that attach them to the conductors, TI encapsulates them in plastic. The '027 patent, entitled, "Process for Encapsulating Electronic Components in Plastic," teaches a technique for doing so.[3] In particular, Claims Twelve, Fourteen, and Seventeen of the patent describe key elements of the technique.

Like TI, Analog and the California Defendants manufacture semiconductors and encase them in plastic using processes similar to '027's. In this suit, TI contends that all of these processes

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[2] Defendants Cypress Semiconductor Corporation, Integrated Device Technology, Inc., LSI Logic Corporation, and VLSI Technology, Inc.

[3] The terms, "process" and "technique" are used interchangeably in this opinion.

infringe on Claims Twelve, Fourteen, and Seventeen and that all five Defendants have used, sold, and imported into the United States products made by the same processes in violation of the same claims.

Concurrent with the filing of this suit, TI filed a complaint with the International Trade Commission ("ITC") alleging that all five Defendants in this action infringed claims One, Twelve, Fourteen, and Seventeen of the '027 patent.[4] After an Administrative Law Judge's initial determination, the ITC issued a Final Determination on March 3, 1992, finding that the defendants had not infringer these claims. The effect of that determination on this suit is contested by the parties.

TI and the California Defendants now move for summary judgment on TI's claims of infringement, as well as the validity of '027. Analog urges summary judgment on three affirmative defenses: License, laches and estoppel, and a grandfather clause defense.

SUMMARY JUDGMENT

Summary judgment is proper when the pleadings and evidence on file show that no genuine issue exists as to any material fact and that the moving party is entitled to judgment or partial judgment as a matter of law. Fed. R. Civ. P. 56. Summary judgment may be entered against a party if, after adequate time for discovery, the party fails to establish the existence of an element essential to his or her case and as to which he or she will bear the burden of proof at trial. *See Celotex Corp. v. Catrett,* 477 U.S. 317, 324-26 (1986). As the Fifth Circuit stated in *Christophersen v. Allied-Signal Corp.*, "[b]efore a court may grant summary judgment, the moving party must demonstrate that it is entitled to judgment as a matter of law because there is no actual dispute as to an essential element of the plaintiff's case." 902 F.2d 362, 364 (1990).

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[4] Both this suit and the ITC complaint were filed on July 9, 1990.

The Supreme Court has explained that a movant for summary judgment does not bear the burden of negating the nonmoving party's case with evidence; rather, the movant must show only that the opponent's case lacks the evidence it needs to support it. *Celotex Corp v. Catrett,* 477 U.S. at 324-25. The Fifth Circuit has held likewise, noting that the moving party is entitled to summary judgment when the motion's opponent fails to make a sufficient showing of proof, *Fontenot,* 780 F.2d at 1195-98, although all evidence must be viewed in the light most favorable to the motion's opponent. *Gremillion v. Gulf Coast Catering Co.,* 904 F.2d 290, 292 (5th Cir. 1990).

These requirements apply with equal force in patent cases. *See Cable Elec. Prods., Inc. v. Genmark, Inc.,* 770 F.2d 1015, 1022 (Fed. Cir. 1985); *Cooper v. Ford Motor Co.,* 748 F.2d 677, 679 (Fed. Cir. 1984). "Thus, the motion of an accused infringer for judgment on the ground of non-infringement of a patent may be granted where the patentee's proof is deficient in meeting an essential part of the legal standard for infringement." *Johnston v. IVAC Corp.,* 885 F.2d 1574, 1577 (Fed. Cir. 1989) (citations omitted); *see Barmag Barmer Maschinenfabrik AG v. Murata Mach., Ltd.,* 731 F.2d 831, 835 (Fed. Cir. 1984).

THE '027 PATENT

The '027 patent, at its core, involves placing a mold around semiconductor and the connected whisker wires, injecting plastic into the mold, and letting the plastic harden. Understanding the details of the patented technique begins with the conductor. Usually long, thin, flat strips of metal conductors are formed out of metal sheets or "frames," often several per frame. In the '027 process, a semiconductor is placed on one of the conductors and fastened by the barely discernable whisker wires to other conductors. A mold is then placed around each semiconductor, encompassing all attached whisker wires and the sections of the conductors to which they connect. Liquid plastic is injected into the mold cavity through a "gate" and allowed to harden. Later, excess portions of the frame, out of which the conductors are cut, are trimmed away, leaving conductor "leads" protruding from

opposite ends of the hardened plastic package. *See* '027 Patent, figures 9, 10.

The mold, itself, is fastened in top and bottom halves around one semiconductor and the sections of the conductors to which the semiconductor is attached. This creates a single cavity inside of which rest the semiconductor and the connected conductor sections. Thus, the points at which the mold halves meet the sections of the conductors that are inside the mold all rest on an imaginary plane that separates the top and bottom halves of the mold cavity. The semiconductor, fastened on one of the conductors, and the whisker wires project upward slightly — into the top half of the mold cavity. It is the imaginary plane that serves as the reference point for the location of the gate.

'027 describes and illustrates the gate as being located below the imaginary plane, in the bottom half of the cavity. The issue is whether '027 requires that exact location, or put another way, whether locating the gate on the *opposite side* of the plane from the semiconductor is material to the encapsulation process patented. Analog and the California Defendants locate their gates ont he same side of the plane as the semiconductor, in other words, in the top half of the mold cavity.

TI contends that '027 requires only that the gate be located in a position *remote* from the semiconductor so that the liquid plastic is not injected directly onto the semiconductor, but has a chance to decelerate, swirl, or carom within the cavity before impacting the semiconductor and that gates located on the same side of the plane as the semiconductor are covered by the patent. The California Defendants and Analog maintain that '027 has patented the opposite side gate location specifically, and, therefore, that their same side gating technique is beyond the purview of '027.

Thus, the infringement claims in this case boil down to a single issue: the location of the gate used to inject liquid plastic into the mold.

INFRINGEMENT

The legal standard for patent infringement is well-settled. "To establish infringement of a patent, every limitation set forth in a (patent) claim must be found in an accused product or process exactly or by substantial equivalence." *Johnston v. IVAC Corp.*, 885 F.2d at 1577 (citations omitted). In this case, TI asserts that all Defendants have infringed the '027 patent, both exactly — or "literally" — and by substantial equivalence.

In its proceeding, the ITC determined that Defendants' had not infringer '027. However, it is well-settled in this jurisdiction that an ITC decision has no preclusive effect on Article III courts. *See Mag Instrument, Inc. v. J. Baxter Brinkman Int'l Corp.*, 123 F.R.d. 543, 547 (N.D. Tex. 1988). In the Federal Circuit's words, "the ITC's determinations regarding patent issues should be given no res judicata or collateral estoppel effect." *Texas Instruments, Inc. v. United States Int'l Trade Comm'n*, 851 F.2d 342, 344 (1988) (citing *Tandon Corp. v. United States Int'l Trade Comm'n*, 831 F.2d 1017, 1019 [Fed. Cir. 1987]); *see* Order Regarding Supplemental Answer, filed August 6, 1992, at 2.

The evidence before the Court does not resolve the opposite side/same side gating infringement dispute in favor of either TI or Defendants in accordance with the aforementioned summary judgment standards. The Court cannot conclude that no genuine issue of fact material to TI's claims of infringement exists.

VALIDITY

A patent is presumed valid. *See* 35 U.S.C. § 282; *Cable Elec. Prods., Inc. v. Genmark, Inc.*, 770 F.2d at 1022. To establish the defense of invalidity, Defendants must prove by clear and convincing evidence that the patent at issue is invalid. *Gillette Co. v. S.C. Johnson & Son*, 919 F.2d 720, 722-23 (Fed. Cir. 1990).

In its proceeding, the ITC determined that '027 was valid. While that determination has no preclusive effect on this Court, *see supra* p. 7, the Federal Circuit has noted that, "a prior

holding of 'validity' should be given weight in a subsequent suit on the issue of 'validity.'" *Stevenson v. Sears, Roebuck & Co.*, 713 F.2d 705, 711 (1983); *see Gillette Co.*, 919 F.2d at 723 (citing *Stevenson*). The precise weight given in the subsequent suit depends almost entirely on the facts of that suit, particularly the availability of additional prior art. *See Stevenson*, 713 F.2d at 711 n.5.

Even affording the ITC's validity determination consideration in this case, given the record before the Court, including Defendants' representations of additional prior art, no party has met the summary judgment standards by which all are bound. The Court cannot conclude that no genuine issue of material fact exists with respect to whether the '027 patent is valid or invalid.

ANALOG'S DEFENSES

Analog moves for summary judgment on three defenses. First, it highlights that the ITC ruled that Analog had acquired a partial license to manufacture the plastic-encapsulated integrated circuits at issue in this case. Analog argues that the ITC's ruling should be given *res judicata* or collateral estoppel effect in this case.

Analog also contends that TI's enforcement of the '027 patent is barred by laches and estoppel. Finally, Analog maintains that it holds equitable rights to import the plastic encapsulated integrated circuits at issue pursuant to the grandfather clause of the Process Patent Amendments Act of 1988.

Analog has failed in its showing of proof with respect the essential elements of each of these defenses. The Court cannot conclude that there is no genuine issue of fact material to Analog's license, laches and estoppel, and grandfather clause defenses.

CONCLUSION

TI's Renewed Motion for Summary Judgment is **DENIED**.

The California Defendants' Motion for Partial Summary Judgment is **DENIED**.

Analog's consolidated Motion for Summary Judgment is **DENIED**.

SO ORDERED.

DATED: August 6, 1992

/s/Barefoot Sanders
BAREFOOT SANDERS, CHIEF JUDGE
UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF TEXAS

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF TEXAS
DALLAS DIVISION

TEXAS INSTRUMENTS, INC.,	*	
	*	
Plaintiff,	*	
	*	
v.	*	Civil Action No. 3-90-
	*	CV-1590-H
ANALOG DEVICES, INC., et al.	*	
	*	
Defendants.	*	

MEMORANDUM OPINION AND ORDER

Before the Court are Texas Instruments, Inc.'s Clarification of Its Position Regarding the '764 Patent and Infringement by Top Gating, filed January 21, 1994; California Defendants' Response, filed February 14, 1994; Texas Instruments, Inc.'s Renewed Consolidated Motion for Summary Judgment, filed January 24, 1994; California Defendants Response, filed February 14, 1994; Analog Devices, Inc.'s Response, filed February 17, 1994; Analog Devices, Inc.'s Motion for Summary Judgment Based on the Preclusive Effect of the ITC's Prior Decisions Regarding Nonpatent Law Issues, filed January 25, 1994; TI's Memorandum in Opposition, filed February 14, 1994; California Defendants' Motion for Partial Summary Judgment of Non-Infringement of the '027 Patent, filed January 25, 1994; TI's Memorandum in Opposition, filed February 14, 1994; California Defendants' Motion for Summary Judgment of Non-Infringement of the '764 Patent, filed January 25, 1994; and TI's Memorandum in Opposition, filed February 14, 1994.

I. BACKGROUND

Texas Instruments Incorporated ("TI") filed this suit on July 9, 1990, alleging that Defendants Cypress Semiconductor Corporation, LSI Logic Corporation and VLSI Technology, Inc. ("the

California Defendants"), and Defendant Analog Devices, Inc. ("Analog") infringed U.S. Patent No. 4,043,027 ("the '027 patent") and U.S. Patent No. 3,716,764 ("the '764 patent"). The '027 and '764 patents relate to processes for the plastic encapsulation of semiconductors or integrated circuit devices. The '764 patent expired on February 13, 1990 and the '027 patent will expire on August 23, 1994.

On the same day this case was filed, TI also filed a complaint involving only the '027 patent with the International Trade Commission (ITC) against the same defendants. Two processes of encapsulation used by Defendants were at issue in the ITC proceeding. One is referred to as bottom or opposite-side gating (hereinafter "opposite-side gating"), where the gate through which plastic fluid is injected into a transfer mold is on the opposite side of the lead frame from when the electrical device (or die) is located, and the other is referred to as top or same-side gating (hereinafter "same-side gating"), where the gate or opening is on the same side as the die. Up to the time of the ITC proceeding, Defendants used opposite-side gating almost exclusively. Defendants converted to same-side gating during the pendency of the ITC proceeding.

An Administrative Law Judge (ALJ) held an eight-day hearing on TI's ITC complaint in May 1991; the ALJ then issued a lengthy written decision, which included over 150 pages of factual findings. On February 18, 1992, the ITC affirmed the ALJ's decision.

On August 6, 1992, this Court denied cross motions for summary judgment on the '027 patent. First, the Court held that the ITC rulings did not preclude a determination by this Court as to infringement because "it is well-settled in this jurisdiction that an ITC decision has no preclusive effect on Article III courts." *See* Order of August 6, 1992, at 7. Second, regarding patent validity, the Court held that "[e]ven affording the ITC's validity determination consideration in this case, given the record before the Court, including Defendants' representations of additional prior art, no party has met the summary judgment standards by

which all are bound." *See id.* at 8. The Court denied motions for summary judgment regarding validity, holding that the Court "cannot conclude that no genuine issue of material fact exists with respect to whether the '027 patent is valid or invalid." *See id.* at 8-9. In addition, the Court denied Analog's motion for summary judgment on three defenses, holding that "the Court cannot conclude that there is no genuine issue of fact material to Analog's license, laches and estoppel, and grandfather clause defenses." *See id.* at 9.

On March 10, 1993, the Federal Circuit affirmed the ITC's decision on the '027 patent.

On March 24, 1993, the Court directed the parties to file brief statements which set out their respective positions on the implications of the Federal Circuit ruling and of *In re Convertible Rowing Exercise Patent Litigation,* 814 F. Supp. 1198 (D. Del. 1993). After receiving the statements, the Court directed the parties to submit a Joint Pretrial Order by May 17, 1993. The Court signed and filed the Joint Pretrial Order on May 25, 1993. After a conference on December 22, 1993, the Court directed the parties to file cross motions for summary judgment on whether and to what extent the factual findings in the ITC proceeding should be given preclusive effect in the present case. The parties then filed the motions referenced above.

II. SUMMARY JUDGMENT ANALYSIS

A. Summary Judgment Standard

Under proper circumstances, awarding summary judgment is not disfavored in the federal courts: "Summary judgment reinforces the purpose of the Rules, to achieve the just, speedy, and inexpensive determination of actions, and, when appropriate, affords a merciful end to litigation that would otherwise be lengthy and expensive." *Fontenot v. Upjohn Co.,* 780 F.2d 1190, 1197 (5th Cir. 1986).

Summary judgment is proper when the pleadings and evidence on file show that no genuine issue exists as to any material fact

and that the moving party is entitled to judgment or partial judgment as a matter of law. *See* Fed. R. Civ. P. 56. Before a court may grant summary judgment, the moving party must demonstrate that it is entitled to judgment as a matter of law because there is no actual dispute as to an essential element of the nonmovant's case. *See Topalian v. Ehrman,* 954 F.2d 1125 (5th Cir.), *cert. denied,* 113 S. Ct. 82 (1992). The threshold inquiry, therefore, is whether there are "any genuine factual issues that properly can be resolved only by a finder or fact because they may reasonably be resolved in favor of either party." *Anderson v. Liberty Lobby, Inc.,* 477 U.S. 242, 251 (1986). Of course, "the substantive law will identify which facts are material." *Id.* at 248.

Once the moving party establishes that there is an absence of evidence to support the nonmovant's case, the burden shifts to the nonmoving party to come forward with "specific facts showing that there is a *genuine issue for trial.*" *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.,* 475 U.S. 574, 587 (1986) (emphasis in original) (quoting Rule 56(e)); *see also Celotex Corp. v. Catrett,* 477 U.S. 317, 322-35 (1986); *Fontenot,* 780 F.2d at 1195-98. A party must do more than simply show some "metaphysical doubt as to the material facts." *Matsushita,* 475 U.S. at 586. Stated another way, "[i]f the record, taken as a whole could not lead a rational trier of fact to find for the nonmoving party, there is no genuine issue for trial." *Friou v. Phillips Petroleum Co.,* 948 F.2d 972, 974 (5th Cir. 1991) (citing *Matsushita,* 475 U.S. at 587). However, all of the evidence must be viewed in the light most favorable to the motion's opponent. *Gremillion v. Gulf Cost Catering Co.,* 904 F.2d 290, 292 (5th Cir. 1990). With these principles in mind, the court turns to an analysis of the motions in this case.

B. TI's Renewed Consolidated Motion for Summary Judgment

TI moves for summary judgment that the ITC's factual findings on the issues of validity and infringement of the '027 patent should be given preclusive effect in this case.[1]

The issue of whether a federal district court in a patent suit must afford preclusive effect to an ITC proceeding alleging unfair trade practices has generated much controversy and commentary. After an exhaustive review of the relevant case law and legal commentary,[2] the Court remains of the opinion, as articulated

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[1] TI's motion relates only to claims that Defendants infringed the '027 patent by opposite-side gating. TI brought no ITC proceeding regarding the '764 patent. TI has indicated that the Court's ruling on the present motion will determine whether TI continues to pursue claims of infringement of the '027 patent by same-side gating, and claims of infringement of the '764 patent. *See* TI's Clarification of Its Position Regarding the '764 Patent and Infringement by Top Gating.

[2] *See, e.g., Blonder-Tongue Lab., Inc. v. Univ. of Illinois Found.*, 402 U.S. 313 (1971); *United States v. Utah Constr. and Mining Co.*, 384 U.S. 394, 422 (1966); *Texas Instruments, Inc. v. United States Int'l Trade Comm'n*, 851 F.2d 342, 344 (Fed. Cir. 1988); *Tandon Corp. v. United States Int'l Trade Comm'n*, 831 F.2d 1017, 1019 (Fed. Cir. 1987); *In re Convertible Rowing Exercise Patent Litigation*, 814 F. Supp. 1197 (D. Del. 1993); *In re Convertible Rowing Exercise Patent Litigation*, 721 F. Supp. 596 (D. Del. 1989), *appeal denied*, 904 F.2d 44 (Fed. Cir.), *cert. denied, Welso, Inc. v. Diversified Products Corp.*, 498 U.S. 897 (1990); *Mag Instrument, Inc. v. J. Baxter Brinkman Int'l. Corp.*, 123 F.R.D. 543, 547 (N.D. Tex. 1988).

Commentators as well as courts have disagreed about whether ITC proceedings are entitled to preclusive effect in federal district court. Some commentators argue that policy considerations warrant issue preclusion, but acknowledge that the direct courts' exclusive jurisdiction over patent cases prevents the courts from applying issue preclusion based on ITC rulings. *See* J. Brian Kopp, Note, *In Re Convertible Rowing Exercise Patent Litigation: Should ITC Patent Decisions be Given Preclusive Effect in the District Courts?*, 24 Cornell Int'l L.J. 357

previously in the August 6, 1992 Order denying summary judgment, that the ITC ruling should not be given preclusive effect in this case.

TI also moves for summary judgment on Defendants' defenses of the grandfather clause, laches and estoppel, and Analog's limited license. The Court again denies these motions because the Court cannot conclude that there is no genuine issue of fact material to these defenses. *See* Order of August 6, 1992, at 9.

Accordingly, TI's Renewed Consolidated Motion for Summary Judgment is **DENIED**.

C. Analog's Motion for Summary Judgment

Analog moves for summary judgment, based on the ITC's findings, that Analog is licensed to practice the '027 patent up to the amount of $94 million per year, and that Analog may allocate its license rights to the devices at issue in this case, and that all plastic encapsulated integrated circuits sold by Analog since November 3, 1990 have been covered by its license. As stated above, the Court again denies summary judgment as to Analog's limited license because the Court cannot conclude that there is no

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(1991); Michael A. Ritscher et al., *The Status of Dual Path Litigation in the ITC and the Courts: Issues of Jurisdiction, Res Judicata and Appellate Review*, 18 Am. Intell. Prop. L.Q.J. 155 (1990). These commentators advocate legislative action to change the district courts' exclusive jurisdiction over patent issues. Other commentators argue in favor of issue preclusion, and find no real jurisdictional bar to applying the doctrine. *See* Hal D. Baird, Note, *Res Judicata Effect of United States International Trade Commission Patent Decisions*, 6 B.Y.U. J. Pub. L. 127 (1992). Finally, some commentators argue that neither policy considerations underlying the doctrine of res judicata nor the jurisdictional scheme of the ITC and the district courts support affording preclusive effect to ITC rulings. *See* Robert G. Krupka et al., *Section 337 and the GATT: The Problem or the Solution?*, 42 Am. U. L. Rev. 779 (1993); Keith John Merritt, Comment, *Res Judicata Effects of Patent and Nonpatent Determinations Under Section 337 of the Tariff Act of 1930*, 15 N.C.J. Int'l. L. & Com. Reg. 533 (1990).

genuine issue of fact material to this defense. *See* Order of August 6, 1992, at 9.

Accordingly, Analog's Motion for Summary Judgment Based on the Preclusive Effect of the ITC's Prior Decisions Regarding Nonpatent Law Issues is **DENIED**.

D. California Defendants' Motion for Partial Summary Judgment of Non-Infringement of the '027 Patent

The California Defendants move for partial summary judgment that their same-side gating processes do not infringe the '027 patent. They clarify that their motion is not based upon any doctrine of preclusion, but rather upon the Federal Circuit's ruling on appeal of the ITC proceeding regarding the '027 patent. They argue that the Federal Circuit opinion is legal precedent that is binding on this Court. The Court disagrees. *See Tandon Corp. v. United States Int'l Trade Comm'n*, 831 F.2d 1017, 1019 (Fed. Cir. 1987) ("[O]ur appellate treatment of decisions of the [ITC] does not estop fresh consideration by other tribunals.") (citing *Lannom Mfg. Col., Inc. v. United States Int'l Trade Comm'n*, 799 F.2d 1572, 1577-78 (Fed. Cir. 1986); *In Re Convertible Rowing Exerciser Patent Litigation*, 721 F. Supp. 596, 602 (D. Del. 1989), *appeal denied*, 904 F.2d 44 (Fed. Cir.), *cert. denied, Weslo, Inc. v. Diversified Products Corp.*, 498 U.S. 897 (1990).

Accordingly, the California Defendants' Motion for Partial Summary Judgment of Non-Infringement of the '027 Patent is **DENIED**.

E. California Defendants' Motion for Summary Judgment on Non-Infringement of the '764 Patent

In this motion, the California Defendants seek summary judgment that their plastic encapsulation processes do not infringe the '764 patent. The '764 patent was not litigated at the ITC. Applying well-established summary judgment standards, the evidence before the Court does not resolve the '764 patent infringement dispute in favor of either TI or the California

Defendants. The Court cannot conclude that no genuine issue of material fact exists regarding TI's claims that the California Defendants infringed the '764 patent.

Accordingly, the California Defendants' Motion for Summary Judgment of Non-Infringement of the '764 Patent is **DENIED**.

III. CONCLUSION

The Court **DENIES** Texas Instrument Inc.'s Renewed Consolidated Motion for Summary Judgment, **DENIES** Analog Devices, Inc.'s Motion for Summary Judgment Based on the Preclusive Effect of the ITC's Prior Decisions Regarding Nonpatent Law Issues, **DENIES** the California Defendants' Motion for Partial Summary Judgment of Non-Infringement of the '027 Patent, and **DENIES** the California Defendants' Motion for Summary Judgment of Non-Infringement of the '764 Patent.

SO ORDERED.

DATED: August 2, 1994.

/s/Barefoot Sanders
BAREFOOT SANDERS, CHIEF JUDGE
UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF TEXAS

U.S. DISTRICT COURT
NORTHERN DISTRICT OF TEXAS

TEXAS INSTRUMENTS, INC.

V.

CYPRESS SEMICONDUCTOR CORP.

LSI LOGIC CORP., AND VLSI TECHNOLOGY, INC.

No. 3:90-CV-1590-H

August 28, 1995

SANDERS, J.

Before the Court are the following motions: Defendants' Motion for Judgment as a Matter of Law ("JMOL II"), VLSI's and LSI's Motion for Relief Pursuant to the Grandfather Clause of the Patent Process Amendments Act of 1988, Defendants' Motion for Reformation of the Damages Award Based on Laches, and Defendants' Motion for a New Trial, all filed on June 14, 1995; TI's Responses, all filed on June 28, 1995; and Defendants' Replies, filed on July 7 and 10, 1995. Also before the Court are TI's Motion for Entry of Judgment, filed June 14, 1995; Defendants' Response, filed June 28, 1995; and TI's Reply, filed July 10, 1995.

I. BACKGROUND

This case concerns two process patents, numbered 3,716,764 ('764) and 4,043,027 ('027), both held by Plaintiff Texas Instruments, Inc. The patents relate to a method of encapsulating semiconductor devices in plastic. TI contends that Defendants' sale of plastic encapsulated integrated circuits infringes on claims 12 and 14 of the '027 patent, and claims 16, 17 and 19 of the '764 patent.

The case was tried to a jury over a three and a half week period, from April 17, 1995 through May 10, 1995. On May 10, the jury reached a verdict, after deliberating for less than an hour, finding that Defendants had willfully infringed both the '764 and

'027 patents, and awarded damages in the amount of $17,800,000 against Cypress, $14,600,00 against LSI, and $19,400,000 against VLSI.

Defendants now attack the verdict, arguing that under the Court's construction of the patent claims at issue, no reasonable juror could have concluded that the Defendants' manufacturing process infringed the two patents. Defendants also contend that the patents are invalid as a matter of law based on a prior invention and for indefiniteness.[1] TI responds that some of Defendants' arguments are procedurally barred, and are in any event without merit.

II. PROCEDURAL REQUIREMENTS OF RULE 50

Before reaching the merits of Defendants' arguments, the Court must address TI's contention that the post-verdict arguments regarding indefiniteness and infringement are barred because Defendants failed to raise them in a proper Rule 50(a) motion at the close of evidence. *See McCann v. Texas City Ref., Inc.*, 984 F.2d 667, 671 (5th Cir. 1993) (failure to move for judgment as a matter of law at the close of evidence waives any post-verdict complaint as to the sufficiency of the evidence). The Court agrees with respect to Defendants' indefiniteness claims, but disagrees with respect to the infringement arguments.

A. Indefiniteness

A motion for JMOL "cannot assert a ground that was not included in the motion for directed verdict." *Allied Bank-West N.A. v. Stein*, 996 F.2d 111, 115 (5th Cir. 1993) (*quoting Mozingo v. Correct Mfg. Corp.*, 752 F.2d 168, 172 (5th Cir. 1985)). The Court agrees with TI that Defendants did not raise their indefiniteness defense in their Rule 50(a) motion at the close

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[1] Given the Court's ruling with respect to infringement, there is no need to address Defendants' additional contention that there was insufficient evidence to prove willfulness. *Read Corp. v. Portec, Inc.*, 970 F.2d 816, 830 [23 USPQ2d 1426] (Fed. Cir. 1992).

of evidence. *See* Def's Motion for Judgment as a Matter of Law filed May 5, 1995 ("JMOL I"). Although Defendants did move for a judgment as a matter of law on a host of validity defenses in their JMOL I, *id.* at 4-7, they notably did not include indefiniteness as an asserted ground. Indeed, Defendants requested that this issue go to the jury. *See* Def's Proposed Charge to the Jury, filed May 5, 1995, at 17. Defendants arguments on this issue after the verdict are thus waived. *See McCann*, 984 F.2d at 667 (preverdict motion for JMOL directed to an issue requiring "completely different evidence" from second issue presented in post-trial motion is insufficient to preserve challenge based on second issue). Defendants appear to concede this point, as their reply brief makes no reference to their indefiniteness challenge. Accordingly, Defendants' Motion for Judgment as a Matter of Law regarding indefiniteness is DENIED.

B. Infringement

TI argues that Defendants' arguments regarding infringement in their post-trial JMOL motion are barred because they are based on the Court's claim construction, and because Defendants failed to renew their Rule 50(a) motion after the charge conference. The Court disagrees. TI has not cited a single case, nor has the Court been able to find any, that holds that a party must renew its Rule 50(a) motion after the charge conference to explain how its insufficient evidence claim fits with the Court's jury charge. Such a holding would appear to be contrary to Rule 50(a) itself, which provides that "motions for judgment as a matter of law may be made *at any time before submission of the case to the* jury." Fed.R.Civ.P. 50 (a) (2) (emphasis added).

TI argues that Defendants' Rule 50(a) motion does not preserve its insufficient evidence challenge because it could not have been based on the Court's claim construction, and because the purposes of Rule 50 were not met by Defendants' May 5 motion. *See MacArthur v. Univ. of Tex. Health Center at Tyler*, 45 F.3d 890 (5th Cir. 1995) (purpose of Rule 50(b) requirement that party renew motion for judgment at the close of evidence is to alert the opposing party to the insufficiency of its case before being

submitted to the jury); *Hall v. Crown Zellerbach Corp.*, 715 F.2d 983, 986 (5th Cir. 1983) (same). The Court disagrees with both contentions. It is true that when Defendants made their Rule 50(a) motion, the Court had not yet construed the patent claims at issue. Defendants therefore argued in their motion that TI's infringement case was based solely on TI's claim construction, and that "should the Court adopt Defendants' proposed construction . . . there is simply no infringement evidence in the record. Moreover, . . . there can be no infringement as a matter of law when the claims are properly construed." Def's JMOL I, at 3-4. This was adequate to put TI on notice of Defendants' contention that if the Court did not adopt TI's claim construction, there was insufficient evidence of infringement. Rule 50 requires no more, and Defendants' post-trial briefing was entirely consistent with this claim.

Furthermore, TI was aware from the beginning of trial, and indeed suggested, that the Court allow the parties to identify their assumed claim construction to the jury, and to present their evidence accordingly, in the alternative if they wished. TI was thus aware that the Court might not adopt its claim construction (or, indeed, the construction offered by either party), and was aware that it had to present infringement evidence accordingly. TI was also aware of Defendants' proposed claim construction no later than Defendants' "*Markman*" brief, filed May 4, 1995. Defendants' Rule 50(a) motion thus preserved the arguments raised in their Rule 50(b) motion, and no additional motion was required after the charge conference.

TI also contends that Defendants' Rule 50(a) motion was not sufficiently specific to preserve their Rule 50(b) arguments because the first motion did make separate claims regarding literal infringement and infringement under the doctrine of equivalents. TI's position is foreclosed by the court's opinion in *Malta v. Schulmerich Carillons, Inc.*, 952 F.2d 1320, 1324-25 [21 USPQ2d 1161] (Fed. Cir. 1991), *cert. denied*, 504 U.S. 974 (1992), which held that an oral motion for a directed verdict "on the issue of noninfringement" was sufficient to support a JNOV on infringement under the doctrine of equivalents.

Finally, TI suggests that Defendants' failure to seek a separate jury interrogatory on infringement under the doctrine of equivalents bars their contention in the Rule 50(b) motion that there was insufficient evidence to submit the issue to the jury. TI cites no authority that so holds, nor would such a holding make sense. Moreover, in an analogous context, the Ninth Circuit has held that a failure to request or object to a jury instruction on a particular issue does not bar a motion for a judgment as a matter of law on that same issue. *Air-Sea Forwarders, Inc. v. Air Asia Co., Ltd.*, 880 F.2d 176, 181-83 (9th Cir. 1989), *cert. denied*, 493 U.S. 1058 (1990). The court recognized that

> the motion for a directed verdict, although sometimes overlapping with the points of law reflected in the jury instructions, is distinct. The inquiry, therefore, focuses on the propriety of granting the motion for directed verdict, which depends upon the sufficiency of the evidence up to that point in the trial; the jury instructions on the points of law contained in the motion for directed verdict are simply outside the scope of that analysis.

Id. at 183.

III. THE MERITS OF DEFENDANTS' JMOL CONTENTIONS

A. The Standard for JMOL

Fifth Circuit law governs the standards applicable to a motion under Fed.R.Civ.P. 50(b). *Sjolund v. Musland*, 847 F.2d 1573, 1576 (Fed. Cir. 1988). In reviewing a motion for judgment as a matter of law,

> the Court should consider all of the evidence — not just that evidence which supports the non-mover's case — but in the light and with all reasonable inferences most favorable to the party opposed to the motion. If the facts and inferences point so strongly and overwhelmingly in favor of one party that the Court believes that reasonable men could not arrive at a contrary verdict, granting the motion is proper. On the other

> hand, if there is substantial evidence opposed to the motions, that is, evidence of such quality and weight that reasonable and fair-minded men in the exercise of impartial judgment might reach different conclusions, the motions should be denied. . . . A mere scintilla of evidence is insufficient to present a question for the jury.

Boeing Co. v. Shipman, 411 F.2d 365, 374-75 (5th Cir. 1969) (*en banc*). The Court proceeds under the above standard.

B. Infringement

1. Literal Infringement

To prove literal infringement, "every limitation set forth in a claim must be found in an accused [process], exactly." *Southwall Technologies, Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1575 [34 USPQ2d 1673] (Fed. Cir. 1995). Applying the above standard, it is clear that Defendants are correct that they are entitled to Judgment as a matter of law on the issue of literal infringement. The Court discusses each claim at issue in turn.

a. Claim 12 of the '027 Patent

Defendants make multiple arguments as to why TI's proof falls short, two of which the Court finds convincing. Defendants are correct that they do not connect all of the terminals on their devices to a lead, as required by Claim 12. Defendants are also correct that they do not mechanically attach the semiconductor device to a conductor, as the Court defined that term.

i. Connecting All of the Terminals

The first element of claim 12 requires "electrically connecting each of the electrical terminals of the device to a conductor." The Court defined a "terminal" as "any point on a semiconductor device that can be used to connect the device to the leads." Jury Charge at 14. Defendants argue that because approximately 90% of their devices contain terminals that are connected to test circuitry on the device, and which are not connected to leads, this limitation is not met. TI responds, completely ignoring the

Court's claim interpretation,[2] that all of the terminals required for the function of the device are connected to a lead.[3]

The Court is compelled to find that there is insufficient evidence to support a finding of literal infringement of this element. TI does not dispute that some number of Defendants' devices contain terminals that are not connected to leads.[4] TI has not pointed to any evidence in the record upon which a jury could find that those terminals could not be connected to leads, which is what must be established in order to find literal infringement under the Court's definition.[5]

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[2] This problem is endemic to TI's briefing in response to the JMOL motion. TI obviously believes that the Court's claim interpretation was incorrect. The Court remains convinced that its claim interpretation was proper based on the evidence and argument before it. While TI is to be commended for the courage of its convictions, an argument based on a claim interpretation that the Court did not adopt is hardly persuasive.

[3] The Court also notes an inconsistency in TI's argument. In attempting to prove its infringement case with respect to the limitation in claim 12 requiring the device to be attached to a "conductor," TI argues that the die pad's function during manufacture (to conduct electricity and thereby protect the chip from static discharge) should be considered. However, in attempting to prove its infringement case with respect to connection of the terminals, TI argues that the terminal's function during manufacture, when they are "required" for testing the device, should be ignored.

[4] TI contends that Defendants' argument should be rejected because they did not prove exactly how many devices had unconnected terminals. This contention ignores the fact that TI is the Plaintiff in this case, and thus had the burden of proving how many devices *did* have all of the terminals connected to leads. If there is a failure of proof, it must be charged to TI as the party with the burden.

[5] The Court has some hesitation on this point, because it appears from Dr. Rodgers' testimony that these terminals are never connected to leads, even when they are being used for test purposes. It may be that the testing equipment does not allow them to be connected to leads, in which case the limitation would probably be met. This is pure speculation, however, because there was no testimony on this point.

ii. Die Pad as a Conductor

Defendants argue that there can be no literal infringement of Claim 12 because their devices are not attached to a "conductor," as the Court defined the term.[6] Again, TI's response ignores the Court's claim construction. TI contended throughout trial that a conductor was "anything capable of conducting electricity and which actually functions to conduct electricity." *See, e.g.*, TI's Revised Proposed Jury Instructions, filed May 5, 1995, p. 32. The Court rejected this definition, concluding that the term conductor was not used in this generic or "dictionary" sense in the '027 or '764 patents, but had a much more specific meaning. TI's response to Defendants' motion points to the testimony of Mr. McAlexander and Dr. Seiling as sufficient evidence of literal infringement, even under the Court's construction. The Court cannot agree.

Had the Court accepted TI's proposed claim construction, the cited testimony would have been sufficient. Under the Court's construction, however, the testimony falls short. It is undisputed that, after trimming, none of Defendants' lead frames have die pads that extend from inside the plastic encapsulation package to

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Again, the lack of evidence must be charged to TI, as the party with the burden of proof.

[6] Claim 12 requires "mechanically attaching a portion of [the] device to at least one of the conductors for support." PX 2, 12:29-31. The Court defined "conductor" as "those portions of the [lead frame] assembly that extend from inside the package to the outside, and connect the semiconductor device to an external circuit." Jury Charge, p. 14.

the outside.[7] At that stage, the die pad thus cannot be a conductor under the Court's definition.

Before trimming, it is true that the die pad does extend from inside the package to the outside, because it is connected to the rest of the lead frame. However, Mr. McAlexander's testimony

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[7] The testimony on this issue was somewhat confusing, due to differing definitions of what constitutes a "pinned out" die pad. In one form of pin out, which Mr. McAlexander apparently recognized, Tr. 690:1-7, the tie bar extends into a lead which goes outside of the package. This type of pin out would meet the Court's definition of a conductor, assuming the lead connected the device into an external circuit. The only example of this type of pin out shown to the jury was PX 140.22(b), a TI lead frame. Mr. McAlexander testified that Defendants did not pin out their die pad in this way. Tr. 690:1-7. Dr. Rodgers testified to the same effect. In the face of this evidence, no rational juror could conclude that Defendants used pinned out lead frames in which the die pad extended out as a lead.

Dr. Seiling, however, testified that 2/3 of Defendants' lead frames were "pinned out" or used down bonding. There is no inconsistency, because a review of the exhibits cited, *see, e.g.*, PX 626, and the testimony, demonstrates that Dr. Seiling used a different definition, describing pin out as meaning that "the die bond pad is connected to a conductor in the central region, which will eventually end up as one of the pins on the outside of the package." Tr. 1128:22-25. Dr. Seiling made clear that the connection was by means of a whisker wire. Tr. 1129:1-5. This type of pin out does not meet the Court's definition of the term conductor, because the die pad itself does not extend from inside the package to the outside. It is merely connected to a structure that does.

The testimony becomes even more confusing however, because what Dr. Seiling calls pinning out, Mr. McAlexander calls down bonding. Tr. 616:17-25. And what Dr. Seiling calls a down bond (i.e. a whisker wire connection from a terminal to the die pad, Tr. 1127), Mr. McAlexander calls a "wire to top side bond." Tr. 626:14. The Court will adopt Dr. Seiling's terminology for the remainder of the opinion, because the evidence demonstrates that Defendants employ no other form of pinning out than that which he described.

that the lead frame, including the die pad, functions as a conductor during manufacture by preventing static electricity from damaging the semiconductor does not establish literal infringement under the Court's definition. Nothing in Mr. McAlexander's testimony shows that the die pad's conductivity during manufacture connects the die to an external circuit. Indeed, the import of his testimony is that during manufacture the die pad prevents the die from being connected to an external circuit. Tr. 591-92.

The remainder of Mr. McAlexander's testimony, regarding the conductive function of the die pad in conjunction with down bonding, pinning out and substrate pumps, does not and cannot establish literal infringement, because none of these techniques utilize a die pad that extends from inside to outside of the package. The fact that a whisker wire may connect the die pad to a lead is not sufficient to establish literal infringement, because, as Mr. McAlexander conceded on cross examination, whisker wires are not conductors within the meaning of the patent. Tr. 753:5-12. Whether Mr. McAlexander's testimony is sufficient for infringement under the doctrine of equivalents is discussed below.

Defendants' remaining arguments in favor of JMOL on the issue of literal infringement of Claim 12 are without merit. Contrary to Defendants' contention, Claim 12 does not require that the die be *entirely* on one side of the plane formed by the conductors (as Claim 14 does), but only that it be generally on one side. *Compare* Jury Charge at 15 with Jury Charge at 17-18. There was sufficient evidence for the jury to find that Defendants' devices were generally on one side of the plane, and that the gate was located on the other side of the plane, notwithstanding Defendants' depressed die pad.

b. Claim 14 of the '027 Patent

The Court agrees with Defendants that the evidence was insufficient to establish literal infringement of Claim 14 of the '027 patent because TI failed to offer any evidence that Defendants place "the entire device . . . entirely on one side of

the plane formed by the conductors." Jury Charge, at 17-18. Again, TI ignores the Court's claim interpretation, and argues that the jury could have found that Defendants mount their devices generally on one side of the plane formed by the Conductors. As discussed above, a response based on an interpretation the Court did not adopt is not persuasive. The Court continues to believe its construction was correct, and, given the evidence and construction before the jury, no rational juror could have found for TI on this issue.

The Court's holding that there is insufficient evidence to support a finding of infringement of the location of the die limitation also requires a holding that there is insufficient evidence to support the jury's finding that Defendants locate the gate for injecting the molding compound on the opposite side of the plane from the die. If the die is not located on one side of the plane formed by the conductors, as required by Claim 14, it follows that the gate cannot be located on the side of the plane opposite that of the die, as Claim 14 also requires. The fact that the gate is located on the side opposite that of the whisker wires, as Defendants stipulated, is not relevant to the question of whether it is on the opposite side from the entire die.

c. Claim 16 of the '764 Patent

Defendants' argument regarding Claim 16 of the '764 patent mirrors, in part, their argument regarding Claim 12 of the '027 patent. Both claims require that the semiconductor device be attached to a conductor. The parties agreed, and the Court held, that the term conductor in Claim 12 of the '027 patent had the same meaning as the term conductor in Claim 16 of the '764 patent. Thus, for the reasons discussed in Part III. B.1.a.i. above, the Court finds that there was insufficient evidence to support the jury's finding of literal infringement of Claim 16. Because there is no literal infringement of the independent claim, there can be no infringement of the dependent claims 17 and 19.

Defendants also contend that there can be no infringement of Claims 16, 17 and 19 because there was no evidence that they used a "substantially flat metal sheet" as required by Claim 16(a).

The Court disagrees. Defendants' contention depends on a claim construction that the Court did not, and will not, adopt — that substantially flat means lacking any intended deviations from being absolutely flat. The Court found nothing to support Defendants' proposed construction, nor does the Court believe that the relevant claim language requires any more explication. No party pointed to anything that indicated that the words used had anything other than their normal meaning. Given the relatively small surface area of the die pad, in comparison with the surface area of the metal lead frame, and the relatively small depression of the die pad, the jury could have found that Defendants' lead frames were substantially flat and that this element of Claim 16 was therefore infringed.

The Court also rejects Defendants' contention that there was insufficient evidence that all of the leads were connected to a side piece, as required by Claim 16(a). Jury Charge at 11. Defendants' argument is not based on a lack of evidence, however, but on their disagreement with the Court's Claim Construction, which refused to rule out the possibility that a side piece could have a rectangular shape. The Court adheres to its construction.

2. Doctrine of Equivalents

While these motions were pending, the Federal Circuit issued its much anticipated restatement of the law of infringement under the doctrine of equivalents. *Hilton Davis Chem. Co. v. Warner-Jenkinson Co., Inc.*, __ F.3d __, 1995 WL 468346 [35 USPQ2d 1641] (Fed. Cir. 1995) (*en banc*). The court held that the "function-way-result" test, articulated in *Graver Tank & Mfg. Co. v. Linde Air Prod. Co.*, 339 U.S. 605 [85 USPQ 328] (1950), was merely one objective method for determining whether there are insubstantial differences between the claimed and accused processes. *Hilton Davis*, 1995 WL 468346 at *4-*5. The court made clear that other factors, such as evidence of copying or designing around, may be relevant. *Id.* at *9.

The Federal Circuit opinion, however, cannot be read to invite juries to make a finding of infringement based simply on overall similarity. The *en banc* panel was concerned with whether

anything *in addition* to "proof of the same or substantially the same (a) function, (b) way, and (c) result" should be required, not whether anything less would be sufficient. *Id.* at *2. The court's reference to proof of copying or designing around was in the context of proof beyond similarity of function, way and result, not instead of. *See id.* at *5, * 9.

The Court therefore finds nothing in *Hilton* Davis that must be read as implicitly overturning the Federal Circuit's earlier holding in *Lear Siegler, Inc. v. Sealy Mattress Co. of Mich.*, 873 F.2d 1422 [10 USPQ2d 1767] (Fed. Cir. 1989), that "the three *Graver Tank* elements must be presented in the form of particularized testimony and linking argument." *Id.* at 1426. This is crucial to the pending motions, because, even if the evidence presented at trial was sufficient to support a finding of equivalents infringement, there was insufficient linking argument by counsel. The Court turns first to the evidence, and then to the argument.

a. Evidence of Equivalents Infringement

TI's only doctrine of equivalents argument in the pending motions relates to the question of whether Defendants' die pads are conductors. TI points to the testimony of Dr. Seiling and Mr. McAlexander as support for finding infringement under the doctrine. Dr. Seiling's testimony, Tr. 1145-46, is clearly insufficient. He merely states his conclusion that attachment of the semiconductor to Defendants' die pad performs the same function with the same result. There is no discussion of whether or how the way the die pad operates is similar to the patent claim, nor is there any particularized testimony explaining *why* the function and result are the same, especially with respect to the conductive function of the conductor in the patent. *Cf. Malta*, 952 F.2d at 1327 (lack of explanatory testimony sufficient to uphold JNOV reversing jury finding of infringement).

Mr. McAlexander's testimony is more extensive, and arguably could support a finding of infringement under the doctrine of equivalents, given that there was no dispute that Defendants' die pads provided mechanical support for the semiconductor. He testified in detail that through use of whisker wire connections,

either from the die pad to a lead, or from a terminal on the device to the die pad, the die pad on Defendants' devices serves to conduct electric charge injected into the substrate during operation of the device, both when it is powered up and through leakage from the active circuitry. Tr. 616-629. Mr. McAlexander also testified that there was no difference between having the die pad extend outside the device as a lead, and electrically connecting the die pad to a lead by means of a whisker wire, because in both cases it provides a direct path for electrical conduction. Tr. 618-19.

The Court questions whether this testimony is sufficient, because, according to Mr. McAlexander, Defendants' die pads always serve to conduct electricity to a ground where it is dissipated. *See, e.g.*, Tr. 622:13-20, 623:8-24, 628:10-15. It is unclear whether conduction of charge to a ground (a one-way path, as the Court understands it) can be considered connecting the device to an external circuit, but reaches no conclusion because there was no testimony on this precise question. This deficiency, in and of itself, may be sufficient to preclude a finding of infringement under the doctrine of equivalents, but TI's claim suffers from an additional defect.

b. Argument Regarding Doctrine of Equivalents

> The party asserting infringement must present "*evidence* and *argument* concerning the doctrine and *each* of its *elements*." The evidence and argument on the doctrine of equivalents cannot merely be subsumed in plaintiff's case of literal infringement. Accordingly, the fact there was evidence and argument on literal infringement, that may also bear on equivalence, does not satisfy *Nestier*.

Lear Siegler, 873 F.2d at 1425 (quoting *Nestier Corp. v. Menasha Corp. — Lewisytems Div.*, 739 F.2d 1576, 1579 [222 USPQ 747] (Fed. Cir. 1984) (emphasis in original), *cert. denied*, 470 U.S. 1053 (1985). The purpose of this dual requirement is to ensure that the jury is not "more or less put to sea without guiding charts when called upon to determine infringement under the doctrine."

Lear Siegler, 873 F.2d at 1426. In this case that is exactly what TI did.

Although there may have been evidence sufficient to support a finding of equivalence, it was presented as evidence of literal infringement. TI's counsel did not rectify this in closing, but instead explicitly disavowed reliance on the doctrine.[8] In this situation, the Court cannot uphold a finding of infringement under the doctrine of equivalents without ignoring *Lear Siegler*. If the case is no longer good law, that is for the Federal Circuit to hold, not this Court.

C. Validity — Prior Invention

The Court rejects Defendants' contention that no rational juror could have failed to find that the patent was invalid under 35 U.S.C. Section 102(g) based on a prior invention of the same subject matter by Robert Helda and Milan Lincoln. Defendants had the burden of proof at trial, by clear and convincing evidence, that Helda and Lincoln had earlier either conceived of and with diligence later reduced to practice, or actually reduced

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[8] TI's counsel stated in his closing that "literal infringement is going to lie with respect to most of the claims. Infringement under the Doctrine of Equivalence [sic] will lie, depending upon the variation that we look at with respect to some of the other claims, but with regard to all of the claims . . . we have established that there is infringement here." Tr. 2949:16-22. However, the closing never proceeded to differentiate between literal and equivalents infringement.

In the rebuttal portion of his closing TI's counsel stated:

> Literally if you look at operation all of VLSI and LSI and Cypress devices satisfy die pad as a conductor because of these wiring setups. There's your lead. There's your wire. Whisker wire lead. . . . And if you figure in the Doctrine of Equivalents, substantially the same functions, substantially the same way, again substantially the same result. It's plain Mr. McAlexander's [sic] testimony would satisfy that test, but we're in a literal infringement situation here.

Tr. 3010:1-14.

to practice, a process containing all of the elements of the Birchler and Williams invention. *Electro Med. Sys. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 1052 [32 USPQ2d 1017] (Fed. Cir. 1994).

TI is correct that there was sufficient evidence for the jury to rely upon in rejecting Defendants' contention that Helda and Lincoln conceived of their invention prior to late May or early June, 1963 (the dates Defendants' acknowledge Birchler and Williams conceived of their invention). *See* TI's Response to Defendants' Motion for JMOL, pp. 21-29. TI is also correct that the jury could have reasonably rejected Defendants' contention that the Helda-Lincoln process included every element of Claims 12 and 14 of the '027 patent because Defendants did not have any contemporaneous mold drawing showing the location of the device or the gate.[9]

IV. MOTION FOR A NEW TRIAL

Fed.R.Civ.P. 50(c) (1) requires the trial court to conditionally rule on a motion for a new trial in the event a motion for judgment as a matter of law is granted. Although the Court is no more anxious to try this case again than are the parties, the Court is firmly convinced that a new trial is required in the event the JMOL is reversed. The jury in this case failed to meaningfully deliberate, and reached a verdict contrary to the great weight of the evidence. *See Kearns v. Keystone Shipping Co.*, 863 F.2d 177, 182 (1st Cir. 1988) ("When brief jury deliberation is coupled with a verdict that is contrary to the great weight of the evidence . . . it creates a situation where the district court has an affirmative duty to set aside the verdict.").

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[9] The Court disagrees with TI that the jury could have relied on the fact that the Helda Lincoln process clamped the leads at only one end, since that is all that is required by the patent under the Court's construction. Jury Charge at 15, 18. The Court also notes that if holding both ends of the conductors were required by the '027 patent, Defendants' process would not infringe, since they do not hold both ends.

This was an extremely complex case, involving extraordinarily technical issues of fact, and many difficult issues of law. The jury was required to resolve infringement of five patent claims, many of which had multiple elements in dispute. In addition, the jury was asked to resolve five validity defenses to each of the patent claims (except Claim 19 of the '764 patent, to which four validity defenses were raised). Contrary to TI's assertions, these defenses, particularly the obviousness and prior invention claims, were not frivolous, and raised close questions for the jury to resolve. Finally, the jury was required to resolve a great deal of conflicting evidence related to damages, including particularly disputes over whether to consider gross or net profit in computing royalties, and the proper royalty rate. The jury accomplished all of this in less than an hour. The jurors' rush through the verdict form and confusion was also demonstrated in their failure to answer the interrogatories on damages, despite clear instructions in the verdict form, *see* Jury Charge at 36-39, and their resolution of damages question in less than five minutes after being instructed by the Court that they had reached an incomplete verdict.

The Court is well aware that the length of deliberations, by itself, is not a sufficient reason to order a new trial. *Guaranty Serv. Corp. v. Amer. Employers' Ins. Co.*, 893 F.2d 725, 729 (5th Cir.) ("If the evidence is sufficient to support the verdict, the length of time the jury deliberates is immaterial.") (citation and quotation omitted), *modified on other grounds*, 898 F.2d 453 (5th Cir. 1990). Here, however, for the reasons discussed at length in the Court's opinion on the JMOL motion, the evidence is not sufficient to support the verdict. Even if the Court's instructions were error, they were still the law the jury was charged to follow. This they did not do, and the Court must accordingly grant a new trial on the issue of infringement.

Defendants' Motion for a New Trial must also be granted on the issue of damages. Even if TI is correct that the jury was free to select a royalty rate in between those offered by the parties, *see SmithKline Diagnostics, Inc. v. Helena Laboratories Corp.*, 926 F.2d 1161, 1168 [17 USPQ2d 1922] (Fed. Cir. 1991), the jury

was not free to select *different* rates for each defendant in the absence of even a shred of evidence to support a finding that different rates were applicable. That is exactly what the jury did here.[10] TI's attempt to defend the jury's findings is clever, but unavailing.[11] If the jury did follow TI's formula, which the Court does not for a moment believe, the jury acted contrary to the Court's instructions, which properly stated that "the minimum damages to which TI is entitled is what you determine, from a preponderance of the evidence, would have been a reasonable royalty for a license to [Defendants] to use the claimed invention *during the period of infringement*." Jury Charge at 37. There is no evidence to support a finding that infringement began with TI's notice and ended with Defendants' conversion to top gating. The jury's verdict demonstrates that the jurors failed to follow the law or were hopelessly confused, and a new trial is warranted.

The Court rejects Defendants' remaining arguments in support of their motion for a new trial. Although TI's counsel's references in closing that Mr. Lehner drew or corrected DX 150 were improper, both because he did not draw it and because there was no evidence in the record that he corrected it, the Court is not persuaded that the comments irreparably prejudiced the verdict. *Nissho-Iwai Co. v. Occidental Crude Sales, Inc.*, 848 F.2d 613, 619 (5th Cir. 1988) (district court may order new trial if improper argument irreparably prejudices a jury verdict). The Court also believes that its instruction to the jury to disregard the

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[10] The jury assessed damages in the amount of $17.8 million against Cypress, $14.6 million against LSI, and $19.4 million against VLSI. Based on the undisputed revenue base for the accused devices — $619,255,007 for Cypress, $387,321,448 for LSI, and $446,920,000 for VLSI, *see* PX 1227 — the assessed damages result in royalty rates of 2.87%, 3.77%, and 4.34%, respectively.

[11] TI argues that the jury's damages award corresponds to "a uniform calculation using the royalty base from the date of formal notice to each defendant through the defendants' conversion to top-gating, taking into account a reduction in percentage royalty from 6% to 5.5% after the expiration of the '764 patent in 1990."

comment if they could not find evidentiary support for it was sufficient to cure any prejudice, especially in the absence of any contemporaneous complaint regarding the instruction.

Defendants are also correct that TI's counsel's statement during closing that he hadn't seen DX 228 until trial was improper, given that the exhibit had been properly provided by the Pretrial Order deadline. No objection to the comment was made at trial, however, and the point is therefore waived. *Id.* The Court is also not persuaded that the comment was unduly prejudicial, since the exhibit was made five weeks before trial, and point made to the jury would have been the same had TI's counsel accurately stated the exhibit's history.

The Court is also not persuaded that it improperly admitted expert testimony by Julian Dority. Defendants did not object at trial to the testimony they now complain about, and the Court properly instructed the jury on the factors it was to consider regarding willfulness, and on its freedom to completely disregard Mr. Dority's opinions.

The Court disagrees that the issue of derivation was improperly kept from the jury. To establish that the named inventor "derived" the invention from another, the challenger must show both prior conception and communication of the conception to the adverse claimant by clear and convincing evidence. *Price v. Symsek*, 988 F.2d 1187, 1190 [26 USPQ2d 1031] (Fed. Cir. 1990). "An inventor's testimony, standing alone, is insufficient to prove conception — some form of corroboration must be shown." *Id.* at 1194. The same is true regarding proof of communication. *Id.* at 1196.

Defendants contend that Birchler and Williams derived the idea of opposite side gating from Frederic Lockhart. Lockhart testified by deposition that when E.R. Williams came to Dow Corning to attempt to transfer mold semiconductor devices using what became the patented process, Lockhart made the suggestion that the devices be flipped in the mold so that the plastic coming in through the gate would not directly impinge on the whisker wires. Lockhart Depo. at 17. Defendants' sole corroboration for

this testimony was the testimony of Gust Kookootsedes, who testified by deposition that Mr. Lockhart made the suggestion. Kookootsedes Depo. at 35. This testimony was hearsay, however, as is made clear later in the deposition.[12] Defendants have not cited a single case in which hearsay, alone, was sufficient to establish corroboration. The testimony was therefore improperly admitted, and the Court rectified its error by properly excluding the issue from the jury, in the absence of competent corroboration.

V. MOTION FOR RELIEF PURSUANT TO THE GRANDFATHER CLAUSE

In 1988, Congress amended the patent laws to allow patent holders to seek damages from the sale in the United States of products manufactured in a foreign country by a process that infringed on a U.S. patent. *See* 35 U.S.C. Section 271(g) (1995 Supp.). The amendment contained a "grandfather clause," however, which provided that

> The amendments made by this subtitle shall not abridge or affect the right of any person . . . to continue to use, sell, or import any specific product already in substantial and continuous sale or use by such person in the United States on January 1, 1988, or for which substantial preparation by such person for such sale or use was made before such date, to the

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[12] Q. And you heard Mr. Lockhart make the suggestion that you referred to?
A. I did not.
Q. Where did you hear it from?
A. I think it was after the fact, after a successful device was molded.
Q. And from whom did you hear this?
A. I don't remember.

Kookootsedes Depo. at 63. Defendants suggest that Kookootsedes testimony was not hearsay, relying on Fed.R.Evid. 801(d)(2)(B) and the testimony at pp. 65-66 of the deposition. This position is without merit because Mr. Williams is not a party-opponent.

> extent equitable for the protection of commercial investments made or business commenced in the United States before such date. . . .

Pub. L. No. 100-418 Section 9006, 102 Stat. 1107, 1567 (1988). The grandfather clause itself contained an exception, which provided that

> This subsection shall not apply to any person or any successor in business of such a person using, selling, or importing a product produced by a patented process that is the subject of a process patent enforcement action commenced before January 1, 1987, before the International Trade Commission, that is pending or in which an order has been entered.

Id. TI contends both that Defendants failed to show that the grandfather clause should apply, and that the exception to the clause does apply. Because the Court finds the second contention dispositive, it does not consider the first.

Although the statute is a model of unclear drafting, and the legislative history ambiguous, the Court is persuaded that TI is correct that the exception applies whether or not the person selling the product was a party to the ITC proceeding. The Court relies primarily on the House Report, which states:

> The grandfather clause does not apply to *any product protected by a process* patent or process patent that is involved in litigation commenced on or before the date of enactment, including actions before the International Trade Commission.

H.R. Rep. No. 60, 100th Cong., 1st Sess. (1987), at Section 6 (emphasis added). The Report makes clear that Congress intended that the grandfather clause not apply when *either* the same product or the same process was at issue in a prior action. There is no suggestion in the statute or the legislative history that Congress intended to limit the exception to situations where the

same party was involved in the prior action.[13] If Congress had wanted to so limit the exception, it could very easily have done so. The Court will not graft another limitation where Congress has chosen not to act. Defendants do not dispute that the '027 and '764 patents were at issue in the ITC DRAM litigation pending on January 1, 1987. The grandfather clause therefore does not apply.

Even if the Court's reading of the statute is mistaken, Defendants' argument under the grandfather clause fails for an additional reason. The clause applies only "to the extent equitable for the protection of commercial investments made or business commenced in the United States before such date. . . ." Defendants have failed to show that they are equitably entitled to any relief. They argue that they are entitled to an equitable license to infringe during a three year period from the date of the act in order to recoup their investment in the patented processes. Defendants fail to separately identify their investments in the patented processes, however, but instead argue that all research and development costs prior to the act should be considered. Furthermore, Defendants own proof shows that they earned a net profit during the 1983-87 time frame. VLSI and LSI's Reply in Support of Motion for Relief, at 9-10. Defendants contended throughout trial that net profit was the profit remaining *after* deducting the cost of research and development, personnel, etc. Defendants have thus failed to show that there are investment expenses that they are entitled to recoup. The grandfather clause defense must fail.

VI. MOTION FOR REFORMATION OF DAMAGES AWARD BASED ON LACHES

Laches is an equitable defense tried to the Court. To establish the defense, Defendants have the burden of proving that TI "delayed filing suit for an unreasonable and inexcusable length of

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[13] The portions of the legislative history cited by Defendants simply state truisms about the statute, but are not persuasive regarding the question before the Court.

time from the time [TI] knew or reasonably should have known of its claim against Defendants, and that Defendants were prejudiced thereby." *A.C. Aukerman Co. v. R.L. Chaides Constr. Co.*, 960 F.2d 1020, 1032 [22 USPQ2d 1321] (Fed. Cir. 1992) (*en banc*). Unreasonable delay and prejudice *must* be inferred, absent rebuttal evidence, where the patentee delayed filing suit for six years after it knew, or in the exercise of reasonable diligence, should have known, of the conduct giving rise to the infringement suit. *Id.* at 1034-37.

At the outset, the Court notes that Defendants have not cited a single case in which a failure to pursue an equitable remedy (in this case an ITC exclusion proceeding) was later used to support a laches finding barring a legal remedy (damages) that accrued at a later date. While it is certainly equitable to say that "a patentee may [not] intentionally lie silently in wait watching damages escalate," *id.* at 1033 (citation omitted), this rule has no application where the patentee has no legal right to damages. The Court therefore concludes that the period prior to January 1, 1989, the effective date of the Patent Process Amendments Act, will not be considered with respect to Defendants' overseas manufacturing in computing the length of time TI delayed in filing suit.[14]

Both Cypress and LSI had domestic manufacturing before TI filed suit, however, and the Court must consider whether a laches defense should apply to damages sought for that manufacture. The Court holds that Defendants have failed to meet their burden of proof. Defendants did not establish that the presumption of prejudice should apply with respect to the domestic manufacture, because there is no proof that TI actually knew of Defendants'

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[14] Even if evidentiary prejudice could be considered as a result of TI's failure to pursue its equitable remedy, a conclusion that neither Defendants nor the Court can support by citation to precedent, the Court finds that Defendants failed to offer evidence that any witnesses or documents, now unavailable, would have been available had TI brought ITC proceedings earlier.

domestic plastic encapsulation prior to July 1984. There is also no proof sufficient to establish that [illegible]hould have known of such manufacture. *See Advanced Cardi[illegible]cular Sys., Inc. v. SciMed Life Sys., Inc.*, 988 F.2d 1157, 1162 [26 USPQ2d 1038] (Fed. Cir. 1993) (patentee is "chargeable with such knowledge as he might have obtained upon inquiry, provided the facts already known by him were such as to put upon a man of ordinary intelligence the duty of inquiry.") (citation and quotation omitted). Defendants offered no proof of what TI actually knew in 1984, but simply surmise that because TI conducted competition analyses, it "must have" known of Defendants' domestic manufacture. In the absence of evidence of widespread sale of plastic encapsulated parts made by Defendants in the United States prior to July 1984, the Court cannot so speculate.

The Court also finds that Defendants failed to establish actual prejudice. As noted above, there was no persuasive showing of evidentiary prejudice. The Court is also not persuaded that there was evidence of economic prejudice, in light of Defendants' failure to design around the patents for two and a half years after suit was filed. Defendants suggest that things would have been different in 1984, because conversion would have been cheaper, but the Court views such a conclusion as speculative. Furthermore, Defendants did not persuasively demonstrate that cost was a major factor in their delay in conversion after suit.

VII. CONCLUSION

Defendants' Motion for Judgment as a Matter of Law is **GRANTED IN PART**. Defendants are entitled to Judgment as a matter of law that they did not infringe TI's patents. Defendants' Motion for a New Trial is **CONDITIONALLY GRANTED IN PART** pursuant to Fed.R.Civ.P. 50(c)(1), in the event the Court's JMOL is reversed. Defendants are entitled to a new trial on the issues of infringement and damages. Defendants' Motion for Judgment as a Matter of Law on Willfulness is **MOOT** in light of the Court's **JMOL**. Defendants' Motion for Reformation of the Damages Award Based on Laches is **DENIED**. VLSI and LSI's Motion for Relief Pursuant to the

Grandfather Clause of the Process Patent Amendments Act of 1988 is **DENIED**. Plaintiff's Motion for Entry of Judgment is **GRANTED IN PART**. Plaintiff is entitled to Judgment that its patents are not invalid. Judgment will be entered accordingly. Defendants are **DIRECTED** to submit an *agreed* form of Judgment by *noon, September 6, 1995*. Pursuant to Fed.R.Civ.P. 54 (d)(1), each party will bear its own costs.

SO ORDERED.

**UNITED STATES COURT OF APPEALS,
FEDERAL CIRCUIT.**

TEXAS INSTRUMENTS INCORPORATED,

Appellant,

v.

**UNITED STATES INTERNATIONAL
TRADE COMMISSION, Appellee,**

and

**Analog Devices, Inc., and
Cypress Semiconductor Corporation,
Integrated Device Technology, Inc.,
LSI Logic Corporation and
VLSI Technology, Inc., Intervenors.**

**CYPRESS SEMICONDUCTOR CORPORATION,
Integrated Device Technology, Inc.,
LSI Logic Corporation and VLSI Technology, Inc.,
and Analog Devices, Inc., Appellants,**

v.

**UNITED STATES INTERNATIONAL TRADE
COMMISSION, Appellee,**

and

**Texas Instruments Incorporated, Intervenr.
Nos. 92-1168, 92-1218, 92-1282, 92-1288,
92-1319 and 92-1320.**

March 10, 1993.

Before NIES, Chief Judge, CLEVENGER, Circuit Judge, and KAUFMAN, Senior District Judge.*

CLEVENGER, Circuit Judge.

In these appeals, consolidated for the purpose of decision, Texas Instruments Incorporated (TI), Analog Devices, Incor-

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* The Honorable Frank A. Kaufman, Senior District Judge of the United States District Court for the District of Maryland, sitting by designation.

porated (Analog), Cypress Semiconductor Corporation, Integrated Device Technology, Incorporated, LSI Logic Corporation, and VLSI Technology, Incorporated (VLSI) (all appellants except TI referred to collectively as respondents) appeal the final determination of the United States International Trade Commission (Commission or ITC) in *In the Matter of Certain Plastic Encapsulated Integrated Circuits*, Inv. No. 337-TA-315, USITC Pub. No. 2574 (Nov. 1992). The Commission found that TI's U.S. Patent No. 4,043,027 (the '027 patent) was not invalid and that certain plastic encapsulated circuits imported by the respondents infringed claims 12, 14 and 17 of the 027 patent. The Commission determined that importation of these infringing devices violated section 337 of the Tariff Act of 1930, as amended, (codified at 19 U.S.C. § 1337 (1988)). The Commission, therefore, issued a limited exclusion order and cease and desist orders to each of the five respondents. Respondents challenge the issuance of these orders and TI seeks additional relief. We affirm the Commission's determination.

I. Background

This case is somewhat complicated because of the numerous issues raised by TI and the respondents. Consequently, a brief background serves as a guide to our decision.

A. The Commission's Decision

On July 9, 1990, TI filed a complaint with the Commission under section 337 alleging that the respondents had engaged in unfair methods of competition and unfair acts including the importation, sale and marketing in the United States of certain plastic encapsulated circuits produced abroad by a process purportedly covered by claims 1, 12, 14 and 17 of the '027 patent.

After evaluating TI's complaint, the Commission instituted an investigation and assigned it to an administrative law judge (ALJ). Following a hearing, the ALJ issued a 282 page initial decision determining that the respondents had violated section 337 in the unlawful importation or sale of certain plastic encapsulated

integrated circuits produced overseas by a process that if practiced in the United States would infringe claims 12 and 14, but not claims 1 and 17, of the '027 patent.

The ALJ determined, *inter alia*, that claim 14 was literally infringed by integrated circuits encapsulated using an "opposite-side gating process." He also determined that claim 12 was infringed by integrated circuits encapsulated using the opposite-side gating process under the doctrine of equivalents. The ALJ determined that none of the claims was literally infringed by integrated circuits encapsulated using a "same-side gating process" and that prosecution history estoppel precluded TI from asserting that integrated circuits encapsulated using the same-side gating process infringed claim 12 under the doctrine of equivalents. With respect to validity, the ALJ determined that the '027 patent was not invalid for obviousness, anticipation, failure to reveal best mode, or obviousness-type double patenting. The ALJ further determined that Analog had acquired a limited license from TI, but that the existence of that license did not provide Analog with a complete defense to the section 337 action.

On December 3, 1991, the Commission decided to review the ALJ's initial decision only on the issues of obviousness, construction of claim 17, infringement of claim 17 and whether claim 17 is practiced by the domestic industry. On that date all unreviewed portions of the ALJ's initial decision were adopted by the Commission. 19 C.F.R. § 210.53(h) (1992). On February 18, 1992, the Commission issued its orders on the basis of a 46 page opinion deciding the issues under review. The Commission again determined that the invention of claims 12, 14, and 17 of the '027 patent would not have been obvious. The Commission construed claim 17 in the same manner as the ALJ, but found that as a factual matter some of Analog's and VLSI's circuits, known as "8-lead" circuits, literally infringed claim 17. Consequently, the Commission issued the limited exclusion order prohibiting all respondents from importing integrated circuits manufactured abroad using the opposite-side gating process covered by claims 12 and 14 of the '027 patent and prohibiting Analog and VLSI from importing circuits manufactured abroad using that process

covered by claim 17 of the '027 patent. The Commission also issued a cease and desist order to each respondent prohibiting them from selling their inventory unless the sale is for reexport. The President did not disapprove the determination, so the Commission's actions became final on April 19, 1992. 19 U.S.C. § 1337(j)(4) (1988).

B. The Patented Claims and the Accused Processes

TI's '027 patent claims a process for encapsulating electronic components in plastic through a process called transfer molding. The process claimed in the '027 patent permits a semiconductor to be encapsulated in plastic without damaging the semiconductor or the wires that provide the electrical connection between the semiconductor device and the metal leads which extend outside the molded package. Claims 12, 14 and 17 of the '027 patent are at issue on appeal.

Claim 12

The process for encapsulating a semiconductor device comprising:

electrically connecting each of the electrical terminals of the device to a conductor and mechanically attaching a portion of said device to at least one of the conductors for support;

disposing the conductors generally in a common plane;

disposing the device and a major portion of the means for making electrical connection between the terminals and the conductors generally on one side of the plane;

disposing the device and portions of the conductors in a mold cavity; and

holding the ends of the conductors extending from the mold cavity while injecting a fluid insulating material into the mold cavity on the other side of the plane to subsequently solidify and embed said device, the fluid insulating material being injected into a portion of the cavity remote from the device and the means electrically connecting the terminals of the device to the conductors, whereby the fluid will not directly engage the device and electrical connection means at high

velocity, and the conductors will be secured against appreciable displacement by the fluid.

Claim 14

A process of encapsulating a semiconductor device comprising:

providing electrical connections between ele trical terminals of the device and a plurality of conductors arranged in a substantially common plane, said device and the thusly provided electrical connections thereto being disposed on one side of said plane, disposing the device and portions of the conductors in a mold cavity, and

holding the conductors while injecting a fluid insulating material into the mold cavity for subsequently solidifying and embedding said device,

the fluid insulating material being injected into a portion of the cavity on the opposite side of said plane to preclude direct high velocity engagement between the fluid and the device and the electrical connections thereto.

Claim 17

A process of encapsulating a semiconductor device comprising:

providing electrical connections between electrical terminals of the device and a plurality of conductors arranged substantially parallel to one another, said device and the thusly provided electrical connections thereto being provided on one side of said conductors,

disposing the device and portions of the conductors in a mold cavity, and

holding the conductors while injecting a fluid insulating material into the mold cavity for subsequently solidifying and embedding said device,

the fluid insulating material being injected into a portion of the cavity on the opposite side of said conductors to preclude direct high velocity engagement between the fluid and the device and the electrical connections thereto.

The Commission found that respondents import encapsulated semiconductors produced using two accused processes. No party disputes these findings. Both processes share certain common characteristics. They employ a stamped lead rectangular metal frame as a structure for mounting, assembling and handling the semiconductor devices. The semiconductor die is attached to the lead frame at the "die pad" with heat conducting adhesive. The die pad supports the die, but does not conduct electricity. Terminals on each die are connected to the frame leads with fine whisker wires. The leads generally radiate outward from the die in a "starburst" pattern. The lead frame and attached die pad are placed in a mold cavity with one end of each lead extending out of the cavity. The other end of each lead is cantilevered inside the cavity like a diving board. The upper and lower halves of the die are clamped together holding one end of each conductor. A fluid insulating material is injected into the mold cavity.

The processes differ in the way in which the plastic encapsulating fluid is introduced into the mold cavity. In the process known as opposite-side gating or "bottom gating," the fluid is introduced through a cavity on the opposite side of the lead frame from the semiconductor die and wires. In the process known as same-side gating or "top gating," the plastic encapsulating fluid is introduced into the mold cavity on the same side of the leads as the semiconductor die and the wires.

C. Issues Appealed

TI and the respondents appeal various portions of the Commission's determination. TI and Analog contend that the Commission incorrectly construed claims 12, 14 and 17. According to TI these claims do not contain a specific gate limitation. TI also argues that claim 17's parallel limitation does not apply to all conductors. Analog contends that the Commission incorrectly determined that the "whereby" or "to preclude" clauses in claims 12, 14 and 17 do not create an additional limitation. With respect to infringement, TI appeals the Commission's findings of noninfringement, asserting that the Commission erred in failing to find that the same-side gating process literally

infringes claims 12, 14 and 17 and that all of respondents' devices produced using the opposite-side gating process literally infringe claim 17. TI also argues that, as a matter of law, it established that the same-side gating process infringes claims 12, 14 and 17 under the doctrine of equivalents. Respondents appeal the Commission's infringement determinations arguing that the Commission erred when it determined that the opposite-side gating processes infringe claim 12 under the doctrine of equivalents, that the opposite-side gating processes literally infringe claim 14 and that the 8-lead devices manufactured using an opposite-side gating process literally infringe claim 17. Respondents also appeal the Commission's determinations that the '027 patent is not invalid as obvious, anticipated, or for obviousness-type double patenting. No issue is raised on appeal regarding claim 1. Finally, TI appeals the Commission's determination that Analog is a licensee of TI while Analog contends that the Commission abused its discretion when it decided to include Analog in its exclusion order and issue Analog a cease and desist order despite the existence of Analog's license. Analog further contends that the Commission could not include Analog in its remedial orders as a matter of law because it is a member of the domestic industry.

II. Infringement

Patent infringement analysis is a two-fold inquiry: a threshold question of claim interpretation followed by a determination of whether the properly construed claims encompass the accused structure or process. *Mannesmann Demag Corp. v. Engineered Metal Prods. Co.*, 793 F.2d 1279, 1282, 230 USPQ 45, 46 (Fed. Cir. 1986).

A. Interpretation of the Claims

Claim interpretation is a question of law that this court reviews *de novo*. *Key Mfg. Group, Inc. v. Microdot, Inc.*, 925 F.2d 1444, 1448, 17 USPQ2d 1806, 1809 (Fed. Cir. 1991). Claim interpretation involves a review of the specification, the prosecution history, the claims (including unasserted as well as asserted claims) and, if necessary, other extrinsic evidence, such

as expert testimony. *Hormone Research Found. v. Genentech, Inc.*, 904 F.2d 1558, 1562, 15 USPQ2d 1039, 1043 (Fed. Cir. 1990), *cert. dismissed*, __ U.S. __, 111 S.Ct. 1434, 113 L.Ed.2d 485 (1991).

1. The gate limitation in claims 12, 14 and 17

Claim 12 requires disposing the conductors generally in a common plane and "injecting a fluid insulating material into the mold cavity on the other side of the plane." Claim 14 similarly requires arranging the conductors in a substantially common plane and injecting a fluid insulating material on the opposite side of the plane. Claim 17 requires injecting the fluid insulating material on the opposite side of the conductors. Relying on the claim language, the specification in conjunction with its drawings, the prosecution history and the testimony of the inventors, the Commission construed claims 12, 14 and 17 to claim a gate specifically located on the other (claim 12) or opposite side (claim 14) of the plane from the semiconductor device and its electrical connections, or, in the case of claim 17, on the opposite side of the conductors from the electrical connections.

TI contends that the Commission's claim construction is erroneous. According to TI claims 12, 14 and 17 only require that the fluid be injected on the opposite side of the plane, not that the gate be located on the opposite side of the plane. Thus, according to TI, injection of fluid insulating material from any point remote from the semiconductor's electrical connections meets the claim language.

TI's contorted construction of the claim language cannot be correct. It cannot seriously be suggested that the location for the injection of the plastic into the mold differs from the location of the gate through which the plastic is injected. As the Commission noted, construing the claims not to refer to a specific gate location as argued by TI would render the disputed claim language mere surplusage. Moreover, the specification, prosecution history, and the testimony of the inventors and experts all support the conclusion that the fluid insulating material is injected through a gate on the other, or opposite side, of the electrical conductors.

Indeed, to construe the claims in the manner suggested by TI would read an express limitation out of the claims. This, we will not do because "[c]ourts can neither broaden nor narrow claims to give the patentee something different than what he has set forth." *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 396, 181 Ct.Cl. 55, 155 USPQ 697, 701 (1967).

2. The "whereby" and "to preclude" clauses in claims 12, 14 and 17

Claim 12 concludes with a clause that states "whereby the fluid will not directly engage the device and electrical connection means at high velocity, and the conductors will be secured against appreciable displacement by the fluid." Claims 14 and 17 conclude with the clause "to preclude direct high velocity engagement between the fluid and the device and the electrical connections thereto." The Commission determined that the "whereby" clause in claim 12 and the "to preclude" clauses in claims 14 and 17 only express the necessary results of what is recited in the claims. For this reason, the Commission gave them no weight in its infringement analysis.

Respondents assert that the "whereby/to preclude" clauses of these claims establish specific further limitations to the claims relating to the velocity of the fluid inside the mold and the manner of securing the conductors which must be met in the respondents' opposite-side gating processes in order for those processes to infringe the claims of the '027 patent. We disagree. A "whereby" clause that merely states the result of the limitations in the claim adds nothing to the patentability or substance of the claim. *Israel v. Cresswell*, 166 F.2d 153, 156, 35 CCPA 890, 76 USPQ 594, 597 (1948). The "whereby/to preclude" clauses of claims 12, 14 and 17 merely describe the result of arranging the components of the claims in the manner recited in the claims: the fluid does not directly engage the device and the electrical connection means because the gate through which the fluid enters is remote from them; the conductors are secured against appreciable displacement by the fluid because they are clamped in notches by the upper and lower halves of the mold die. There-

fore, the Commission correctly determined that the "whereby/to preclude" clauses do not contain any limitations not inherent to the process found in claims 12, 14 and 17.

3. The "parallel" limitation in claim 17

Claim 17 claims "electrical connections between electrical terminals of the device and a plurality of conductors arranged substantially parallel to one another[.]" Relying on the language of the claims, the specification and its drawings, and witness testimony, the Commission, on review, construed claim 17 to require parallelism among all conductors used, *i.e.*, all of the two or more conductors used must be arranged parallel to one another over a significant portion of their lengths.

On appeal, TI contends that the claim element "a plurality of conductors arranged substantially parallel to one another" is met so long as the accused device contains any two conductors that are substantially parallel to one another. Essentially, TI reads "plurality" to mean "two" and the terms "to one another" to mean "to each other." Once again, the construction TI proposes must fail because it would read a limitation out of the claim. The claim language does not describe a relationship between a conductor and one other conductor. Rather, the specification, the drawings and the testimony of TI's own witness require that each conductor be substantially parallel to all the other conductors used in the device. Thus, the Commission correctly determined that all the conductors must be substantially parallel to one another.

B. Application of Claims to Processes

Having determined that the Commission correctly construed the claims, we next review whether the Commission also correctly decided the myriad of infringement allegations. The question of infringement, either literal or by equivalents, is a factual one. *SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1125, 227 USPQ 577, 589 (Fed. Cir. 1985) (*in banc*). We review the Commission's factual findings under the substantial evidence standard. 19 U.S.C. § 1337(c) (1988) (persons adversely affected by certain final Commission determinations may appeal to the

Federal Circuit for review in accordance with chapter 7 of Title 5 of the U.S.Code); *SSIH Equip., S.A. v. United States Int'l Trade Comm'n*, 718 F.2d 365, 371-72, 218 USPQ 678, 684 (Fed. Cir. 1983).

1. Same-side processes

The Commission determined that semiconductor products made using same-side gating processes imported by respondents did not literally infringe claims 12, 14 and 17 because they did not meet the opposite-side gate limitation found in these claims. The Commission also determined that prosecution history estoppel precluded TI from expanding the opposite-side gate limitation in claim 12 to include same-side gating. Thus, same-side gating products could not infringe claim 12 under the doctrine of equivalents.

a. Literal infringement

On appeal, TI contends that the Commission's determination that products made using same-side processes do not literally infringe claims 12, 14 and 17 should be reversed. Having held that the Commission did not err in construing the claims to contain a specific gate limitation, we also affirm the Commission's determination that products made using the same-side gating process do not literally infringe claims 12, 14 and 17. The Commission's finding that these products are not produced using an opposite-side gating process is based on substantial evidence.

b. Doctrine of equivalents

Infringement under the doctrine of equivalents has been "judicially devised to do equity" in situations where there is no literal infringement, but liability is nevertheless appropriate to prevent what is in essence a pirating of the patentee's invention. *Loctite Corp. v. Ultraseal, Ltd.*, 781 F.2d 861, 870, 228 USPQ 90, 96 (Fed. Cir. 1985) (citing *Hughes Aircraft Co. v. United States*, 717 F.2d 1351, 1361, 219 USPQ 473, 480 (Fed. Cir. 1983)). Prosecution history estoppel is a policy oriented limitation to the range of equivalents available to the patentee, a

limitation that we review as a question of law. Prosecution history estoppel will not allow the patentee to extend the range of equivalents accorded the device or process to subject matter relinquished during prosecution of the patent. *Id.*, 781 F.2d at 870, 228 USPQ at 96 (citing *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 900, 221 USPQ 669, 678 (Fed. Cir.), *cert. denied*, 469 U.S. 857, 105 S.Ct. 187, 83 L.Ed.2d 120 (1984)).

The Commission found that the inventors had based their argument for claim 12's patentability on the opposite-side gating limitation it contained. Having done so while prosecuting the '027 patent, TI was estopped from asserting that the same-side gating process used by respondents is the equivalent of the opposite-side gating specified in claim 12. The Commission therefore concluded that the respondents' same-side gated processes could not be found to infringe claim 12 of the '027 patent under the doctrine of equivalents.

Determining the limitations on the doctrine of equivalents is a question of law which we review *de novo*. *Id.*, 781 F.2d at 870, 228 USPQ at 96. On appeal, TI argues that no prosecution history estoppel exists because there is no basis in the file history to conclude that TI gave up coverage of same-side gated processes. More particularly, TI asserts that with no citation of a prior art reference disclosing the same-sided process the inventors cannot be deemed to have disclaimed or disavowed same-side gating.

We must decide whether the Commission erred as a matter of law in determining that the prosecution history indicates that the '027 patent applicants disclaimed or disavowed same-side gating. The prosecution history to which we may look includes "[t]he entire record of proceedings in the Patent and Trademark Office, including representations made to the Examiner that the invention is patentable. . . ." *Jonsson v. Stanley Works*, 903 F.2d 812, 817, 14 USPQ2d 1863, 1868 (Fed. Cir. 1990) (citing *Standard Oil Co. v. American Cyanamid Co.*, 774 F.2d 448, 452, 227 USPQ 293, 296 (Fed. Cir. 1985)).

The '027 patent issued on August 23, 1977. Its history traces to December 16, 1963, when inventors Robert O. Birchler and E.W. Williams filed the grandparent application, Application No. 331,006, entitled "Process for Encapsulating Electronic Components in Plastic." On October 17, 1968, the inventors filed Divisional Application No. 768,311, the '027 patent's parent application, which was followed by Continuation Application No. 384,768 on July 30, 1973. That continuation application matured into the '027 patent. It is the interaction between the inventors and the patent examiner during the prosecution of the '006 application that is of interest in this appeal.

As a general proposition, prosecution history estoppel is based upon a showing that an applicant amended a claim to avoid a cited prior art reference. *Hughes Aircraft*, 717 F.2d at 1362, 219 USPQ at 481. TI correctly states that none of the references cited by the examiner disclosed same-side gating and the inventors never amended claim 12 to add the opposite-side gating limitation to distinguish and overcome a prior art reference. Amendment of a claim in light of a prior art reference, however, is not the *sine qua non* to establish prosecution history estoppel. Unmistakable assertions made by the applicant to the Patent and Trademark Office (PTO) in support of patentability, whether or not required to secure allowance of the claim, also may operate to preclude the patentee from asserting equivalency between a limitation of the claim and a substituted structure or process step. *Hormone Research*, 904 F.2d at 1567, 15 USPQ2d at 1046; *Kinzenbaw v. Deere & Co.*, 741 F.2d 383, 389, 222 USPQ 929, 933 (Fed. Cir. 1984), *cert. denied*, 470 U.S. 1004, 105 S.Ct. 1357, 84 L.Ed.2d 379 (1985). Application of this test requires, in each case, examination of the prosecution history taken as a whole.

The prosecution history of the '027 patent shows that the inventors placed special emphasis on locating the gate on the opposite side of the mold from the semiconductor because locating the gate on the same-side of the mold did not work. An invention disclosure form placed by the inventors in the PTO file reads:

> In order to transfer mold successfully, it was found that the gate placement was critical. The first experiment placed the gate in the top of the unit, which is the conventional location for end gating. . . . The results were most unsatisfactory with the emitter and base lead being broken as the cavity filled. It was found during the same experiment that better results were obtained when the unit was in the top half of the mold so it did not see the plastic as it is initially introduced to the cavity.

Consequently, the disclosure form and the inventor's notebook, also of record, assert that one of the four important features of the invention was that the "gate is in the bottom half [opposite-side] of the mold, and the device in the top." The importance of opposite-side gating was also emphasized in the figure attached to the invention disclosure form, a drawing that eventually became Figure 5 of the '027 patent. The drawing shows the plastic insulating material, after injection in the side opposite from the semiconductor, flowing into the bottom of the mold cavity and then flowing up around the device into the top half of the mold cavity. *In toto*, the invention disclosure form explains that same-side gating was known in the molding art, and that the inventors were certain that same-side gating could not achieve their desired invention. The inventors' own assumptions provided the motivation for purposeful exclusion of same-side gating from claim 12. As far as they were concerned same-side gating in transfer molding was an obvious but unworkable limitation. The inventors first tried the "conventional" same-side gate location but discovered that it was opposite-side gating that produced usable encapsulated products. Thus, when the examiner rejected claim 12's predecessor claims in the '006 application, claims 21 and 22, as obvious in view of three prior art references, the inventors argued that it was the organization of the electrical connections in a common plane, with the conductor wires being located on one side of the plane and the plastic fluid being injected into the mold on the opposite side of the plane that made the claim patentable:

> none of these references alone or in combination in any way show or suggest the step of injecting the fluid insulating material into a mold cavity on an opposite side of the common

> plane defined by the conductor wires from the side on which the device and a major portion of the means making the electrical connection between the device and the conductor wires are disposed.

By expressly stating that claim 12 was patentable because of the opposite-side gating limitation, particularly in light of their previous admission that same-side gating was known in the art, the inventors unmistakably excluded the same-side gating as an equivalent. Having represented that same-side gating does not work, and having distinguished cited prior art as not teaching the functional opposite-side gated process, TI cannot foreclose reliance upon its unambiguous surrender of subject matter. *See Standard Oil Co.*, 774 F.2d at 452-53, 227 USPQ at 296 (metallic copper represented in specification as "ineffective," and "outside [the] claims" in response to examiner's rejection). Such foreclosure is impermissible because "other players in the marketplace are entitled to rely on the record made in the Patent Office in determining the meaning and scope of the patent." *Lemelson v. General Mills, Inc.*, 968 F.2d 1202, 1208, 23 USPQ2d 1284, 1289 (Fed. Cir. 1992). For these reasons, the Commission did not err in concluding that TI is estopped from asserting that a same-side gating process is the equivalent of the opposite-side gating process in claim 12.

TI draws our attention to the fact that the Commission made no specific determination as to the range of gating equivalents available to TI under claims 14 and 17 of the '027 patent. If the Commission's silence on that point is error, the error necessarily is harmless because the prosecution history estoppel we hold proven on claim 12 is equally applicable to claims 14 and 17.

2. Opposite-side processes

The Commission determined that semiconductor products made using opposite-side gating processes imported by respondents infringed claim 12 under the doctrine of equivalents, infringed claim 14 literally, and that Analog's and VLSI's 8-lead semiconductor products made using opposite-side gating processes literally infringed claim 17. Respondents challenge all three of these

infringement determinations on appeal. TI challenges the claim 17 infringement finding asserting that it should cover more types of semiconductors.

a. Claim 12 and doctrine of equivalents infringement by opposite-side processes

In determining that the respondents' products made using an opposite-side gating process infringe claim 12 of the '027 patent under the doctrine of equivalents, the Commission found that the only limitation of claim 12 not literally found in the respondents' opposite-side encapsulating processes is the attachment of the semiconductor device to a conductor for support. The Commission found that the die pad in respondents' products is the equivalent of the supporting conductor, because it performs exactly the same function in exactly the same way to achieve exactly the same result. Because the accused processes merely divided the two functions of the supporting conductor (support of the die and electrical connection thereof to an external circuit) between two separate components of their processes, the processes infringed the claim.

On appeal, respondents contend that the Commission's determination that devices made using opposite-side gating processes infringe claim 12 under the doctrine of equivalents is not based on substantial evidence because (1) the accused processes do not meet the whereby limitation; (2) the accused processes do not have an equivalent to the support conductor; and (3) the die pad in the accused processes does not meet the common plane limitation. Further, infringement is precluded by the reverse doctrine of equivalents.

Because we agree with the Commission that the whereby clause in claim 12 is not an additional limitation, we reject the contention that infringement cannot be found provided that all limitations of the claim are present in the accused process. Substantial evidence supports the Commission's determination that the products made using opposite-side gating processes infringe claim 12 under the doctrine of equivalents: they contain the equivalent of the claimed support conductor and they meet the

common plane limitation. Claim 12 requires, *inter alia,* that the device be mechanically connected to a conductor for support and electrically connected to the same or another conductor to conduct electricity. Further, claim 12's conductors are to be generally disposed in a common plane. The die pad in respondents' process is the functional equivalent of claim 12's supporting conductor limitation: it supports the semiconductor, as a mechanical attachment, in order to hold the semiconductor in place. Respondents' die pad need not, and does not, function as a conductor; it does not become a conductor simply because it assumes the support function. Therefore, the die pad need not meet the common plane limitation of claim 12. That limitation is met by respondents' conductors which are disposed in a common plane.

Furthermore, we will not consider Analog's and VLSI's reverse doctrine of equivalents argument in this appeal because they waived the right to pursue this argument while at the Commission. Analog, arguing the infringement issues for all respondents, made a reverse doctrine of equivalents argument at the Commission in its posthearing brief submitted to the ALJ. The ALJ made no specific findings on this defense in his initial decision, but Analog did not raise this "defect" in the ALJ's decision in its petition for review submitted to the Commission. Analog contends that it raised the issue in its petition for review when it asserted that its devices did not literally infringe claim 17. We disagree. One does not make a reverse doctrine of equivalents argument simply by mounting a defense to literal or doctrine of equivalents infringement. *See Rolls-Royce Ltd. v. GTE Valeron Corp.*, 800 F.2d 1101, 1108, 231 USPQ 185, 190 (Fed. Cir. 1986). The Commission's rules governing section 337 investigations deem abandoned any issue not raised in the petition for review. 19 C.F.R. § 210.54(a)(2) (1992). Respondents having failed to alert the Commission to a possible error in the ALJ's initial decision, this court will not now examine the issue. *Allied Corp. v. United States Int'l Trade Comm'n*, 850 F.2d 1573, 1580, 7 USPQ2d 1303, 1308 (Fed. Cir. 1988), *cert. denied*, 488 U.S. 1008, 109 S.Ct. 791, 102 L.Ed.2d 782 (1988).

b. Claim 14 and literal infringement by opposite-side processes

The Commission determined that claim 14 is literally infringed by products made using opposite-side gating processes having found that respondents' processes meet all the limitations of claim 14.

Respondents contend that the Commission's claim 14 infringement determination is not based on substantial evidence because (1) the accused processes do not meet the "to preclude" clause limitation; (2) the die pad in the accused processes does not meet the common plane limitation; and (3) literal infringement is precluded by the reverse doctrine of equivalents.

None of these assertions merits much extended discussion. As explained above, the "to preclude" clause is not an additional limitation that the accused processes must meet. Further, claim 14, unlike claim 12, does not have a supporting conductor limitation so the supporting die pad in the accused processes need not be aligned with the conductors in a generally common plane in order to literally infringe claim 14. There is substantial evidence to support the finding that the conductors in the respondents' devices meet the common plane limitation. Finally, as explained above, respondents have waived their reverse doctrine of equivalents argument.

c. Claim 17 and 8-lead opposite-side devices

TI, Analog and VLSI appeal the Commission's determination that 8-lead products made using opposite-side processes literally infringe claim 17. The Commission determined that such products literally infringed claim 17 because all of their conductors are "arranged parallel over a significant portion of the conductors' length."

TI contends that all products made using opposite-side processes literally infringe claim 17 provided the claim is construed to require only that two conductors be substantially parallel to each another. Since we have held that the Commission did not err in construing the claim to require that all the conductors must

be substantially parallel to each other, TI's challenge to the correctness of this infringement determination must fail.

Analog and VLSI contend that the Commission's determination that their 8-lead devices (produced using opposite-side gating processes) literally infringe claim 17 is not based on substantial evidence because (1) the accused processes do not meet the "to preclude" limitation; (2) the presence of a die pad in such processes means that they fail to meet the "all parallel conductor" limitation; and (3) literal infringement is precluded by the reverse doctrine of equivalents.

Analog's and VLSI's arguments are meritless. As explained above, the "to preclude" clause is not an additional limitation that the accused processes must meet. Further, claim 17 does not contain the support limitation found in claim 12. Therefore, there is no need to consider whether the die pad meets the "all parallel" limitation, a limitation which is addressed to the conductors not to the die pad. Moreover, there is substantial evidence to support the Commission's determination that the conductors on the 8-lead devices meet the "all parallel limitation" and therefore literally infringe claim 17. Finally, as explained above, respondents have waived their reverse doctrine of equivalents argument.

III. Validity

A patent is presumed valid and the party asserting invalidity must overcome this presumption by clear and convincing evidence establishing facts which support the conclusion of invalidity. *Intel Corp. v. United States Int'l Trade Comm'n*, 946 F.2d 821, 834, 20 USPQ2d 1161, 1172 (Fed. Cir. 1991). Respondents challenge the Commission's determination that the '027 patent is not invalid on three grounds, that the patent is obvious under section 103, that it is anticipated under section 102, and that it is invalid for obviousness-type double patenting over U.S. Patent No. 3,716,764 (the '764 patent). Respondents do not contend, as they did before the Commission, that the '027 patent is invalid for failure to reveal the best mode.

A. Anticipation

A patent may be invalid as anticipated due to the prior conception and reduction to practice by another of the patentee's invention. 35 U.S.C. § 102(g) (1988). Anticipation is a question of fact. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1379, 231 USPQ 81, 90 (Fed. Cir. 1986), *cert. denied*, 480 U.S. 947, 107 S.Ct. 1606, 94 L.Ed.2d 792 (1987). We review the Commission's factual determinations under the substantial evidence standard. *SSIH*, 718 F.2d at 371-72, 218 USPQ at 684.

Respondents assert on appeal, as they did before the Commission, that work performed by Mr. Robert Helda and Mr. Milan Lincoln at Motorola anticipated the '027 patent. The Commission determined that the Helda-Lincoln invention was not reduced to practice until November 6, 1963, after Mr. Birchler and Mr. Williams reduced the '027 process to practice in late September 1963 at Texas Instruments. Therefore, the Commission found that the Helda-Lincoln invention is not prior art and cannot anticipate the '027 patent.

On appeal respondents do not argue that the Helda-Lincoln reduction to practice date of November 6, 1963, is erroneous. Instead, they argue that the reduction to practice date of the '027 process in late September 1963 is erroneous because corroborating evidence only supports a reduction to practice date of December 12, 1963, the filing date of the '027 patent. If the '027 patent's process were reduced to practice on that date, then the Helda-Lincoln invention prior art would anticipate the '027 patent.

Respondents' arguments are to no avail. Reviewing this issue *de novo*, *DSL Dynamic Sciences v. Union Switch & Signal, Inc.*, 928 F.2d 1122, 1125, 18 USPQ2d 1152, 1154 (Fed. Cir. 1991), we conclude that the '027 patent's reduction to practice date of late September is corroborated by the evidence and is not erroneous. The claims of the '027 patent therefore cannot be anticipated by the Helda-Lincoln invention.

B. Obviousness

A patent is invalid if the differences between the subject matter patented and the prior art are such that the patented subject matter as a whole would have been obvious at the time of invention to a person having ordinary skill in the art. 35 U.S.C. § 103 (1988). Obviousness is determined as a question of law based on a series of factual determinations, including (1) the scope and content of the prior art, (2) the differences between the art and the claims at issue, (3) the level of ordinary skill in the art and (4) any other objective evidence. *Graham v. John Deere Co.*, 383 U.S. 1, 17, 86 S.Ct. 684, 693, 15 L.Ed.2d 545, 148 USPQ 459, 467 (1966); *see, e.g., Allen Archery, Inc. v. Browning Mfg. Co.*, 819 F.2d 1087, 1092, 2 USPQ2d 1490, 1493 (Fed. Cir. 1987). We review the Commission's factual determinations under the substantial evidence standard. *SSIH*, 718 F.2d at 371-72, 218 USPQ at 684. We then review the legal conclusion of nonobviousness *de novo*. *Intel Corp.*, 946 F.2d at 834, 20 USPQ2d at 1173.

The Commission having correctly found that the Helda-Lincoln invention was not reduced to practice before the '027 process, there is no dispute about the scope and content of the prior art. The Commission found that the prior art includes: (1) the Doyle process patent; (2) the Lanzl patent; (3) the Sylvania transistor as described in the Carruth and Sussman article; (4) the Zecher article; and (5) the Burns patent.

The Commission, reviewing the ALJ's initial decision, found the '027 patent nonobvious because it found nothing in the Sylvania, Lanzl, Burns, or Zecher references to suggest making the leads in the Doyle reference planar while injecting molten plastic from the opposite side of the plane to produce an inexpensive semiconductor. The Commission further found that a secondary indicia of nonobviousness, long-felt need, supported its determination that the invention of the '027 patent was nonobvious.

Respondents assert that the Doyle reference teaches opposite-side gating which renders the '027 patent obvious

because all the other features of the patent are included in the prior art. Further, respondents argue that there can be no long-felt need when the period between the date of the most pertinent prior art references (here Doyle and Sylvania) and the claimed invention is very short.

There is substantial evidence in the record to support the Commission's finding that the Doyle reference does not teach opposite-side gating. Moreover, we agree with the Commission that the references in combination do not suggest the invention as a whole claimed in the '027 patent. Absent such suggestion to combine the references, respondents can do no more than piece the invention together using the patented invention as a template. Such hindsight reasoning is impermissible. *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988). Thus, the Commission's conclusion that the '027 patent would not have been obvious in view of these prior art references is not erroneous.

With respect to long-felt need respondents incorrectly argue that long-felt need is analyzed only as of the date of the "most pertinent" prior art references. Rather, long-felt need is analyzed as of the date of an articulated identified problem and evidence of efforts to solve that problem. The Commission found that semiconductor manufacturers began searching for a means to mass produce inexpensive transistors in the early 1960s. The industry aggressively embraced the technique of packaging components in plastic by transfer molding between 1957 and 1963. Early attempts encountered problems, such as damaging the devices when using high velocity molding compounds and multiple inventors were working on the problem. For these reasons, there is substantial evidence to support the Commission's finding of long-felt need for the process claimed in the '027 patent.

C. Obviousness Type Double Patenting

Twenty months after inventors Birchler and Williams filed the '006 patent application, the examiner determined that the amended claims of the '006 application described three distinct inventions. He restricted each claim to one of three groups. The group I

claims were drawn to a semiconductor device, the group II claims to an injection molding process for semiconductor devices, and the group III claims to "a lead frame for semiconductor devices and a method for securing semiconductor crystals to that frame, i.e. an intermediate product for use in producing the final semiconductor device." The group I claims resulted in patent number 3,439,238. The group III claims eventually issued as the '764 patent. The group II claims eventually issued as the '027 patent.

The Commission determined that claims 12, 14 and 17 of the '027 patent were not invalid for obviousness-type double patenting. When the examiner restricted the claims to three groups, he included in group III a claim associated with transfer molding, although he described that group not to include transfer molding. Nonetheless, the Commission concluded that the actual restriction groupings, not the written descriptions thereof, control for purposes of ascertaining if subsequent amendments to original claims are consonant with the substantive restrictions drawn by the examiner.

On appeal, respondents again argue that including the transfer molding claim (claim 17) in the '764 patent failed to maintain consonance with the restriction requirement the examiner imposed on the '027 patent's grandparent application. Having failed to maintain consonance with the restriction requirement, claims 16 and 17 of the '764 patent become prior art which, when combined with the Doyle reference render claims 12, 14 and 17 of the '027 patent invalid.

Double patenting is a question of law that this court reviews *de novo*. *General Foods Corp. v. Studiengesellschaft Kohle mbH*, 972 F.2d 1272, 1277, 23 USPQ2d 1839, 1843 (Fed. Cir. 1992). A patentee may not remove a patent from consideration as a prior art reference pursuant to 35 U.S.C. section 121 (1988) where the principle of consonance is violated. *Symbol Technologies, Inc. v. Opticon, Inc.*, 935 F.2d 1569, 1579, 19 USPQ2d 1241, 1249 (Fed. Cir. 1991). In order for consonance to exist, "the line of demarcation between the 'independent and distinct inventions' that

prompted the restriction requirement" must be maintained. *Gerber Garment Technology, Inc. v. Lectra Sys., Inc.*, 916 F.2d 683, 688, 16 USPQ2d 1436, 1440 (Fed. Cir. 1990). We agree with the Commission's determination that the post-restriction addition of claim 17 to the '764 patent is consonant with the grouping restriction actually imposed by the examiner. Consequently, the protection of section 121 applies and the claims of the later issued '027 patent are protected from an allegation of double patenting. Moreover, even if there were no consonance due to a breach of the restriction requirement, respondents' contentions on the ultimate obviousness-type double patenting inquiry would fail. Claims 12, 14 and 17 of the '027 patent are patentably distinct from claim 17 of the '764 patent. *See General Foods*, 972 F.2d at 1277, 23 USPQ2d at 1843; *Symbol*, 935 F.2d at 1581, 19 USPQ2d at 1249. These claims are not so very much alike as to render claims 12, 14 and 17 of the '027 patent obvious in view of claims 16 and 17 of the '764 patent. *See Gerber*, 916 F.2d at 686, 16 USPQ2d at 1438. Claims 12, 14, and 17 of the '027 patent disclose injecting the fluid insulating material from a gate on the opposite side of the conductors. Opposite-side injection of the fluid is not disclosed in either claim 16 or 17 of the '764 patent, nor would it be obvious in light of claims 16 or 17 of the '764 patent.

IV. Issues Particular to Analog

On August 8, 1990, after the Commission instituted its investigation, Analog acquired the stock of a corporation that had entered into a cross-license agreement with TI in 1974 for several patents including the '027 patent. The license agreement provides that it is to be construed in accordance with Texas law. On November 3, 1990, Analog and that company formally merged. The Commission determined that Analog acquired this license because the agreement between TI and its licensee did not require consent from TI for the licensee to transfer to a third party acquiring substantially all the assets of the licensee.

On appeal, TI contends that the Commission's construction of the license's transferability is legally erroneous and unreasonable.

Because we agree with the Commission that the contract is not ambiguous, we review this question of contract interpretation *de novo*. *Snug Harbor, Ltd. v. Zurich Ins.*, 968 F.2d 538, 541-42 (5th Cir.1992). Because we do not find the Commission's construction of the contract to be erroneous, we affirm the Commission's determination that Analog acquired a license through the merger, a license for sales not to exceed the annual sales of licensed products being made by the original licensee at the time Analog acquired the license.

Analog is not content with the decision that it acquired a valid license from TI. Analog further argues that the Commission's failure to dismiss Analog from the investigation and its decision to issue a cease and desist order against it is erroneous because as a licensee Analog cannot be committing an unfair trade practice.

The Commission determined that Analog became licensed after the institution of its investigation, a considerable period after a violation of section 337 was alleged to have begun. The Commission found that Analog (along with the other respondents) violated section 337 by importing and selling after importation the accused devices. The Commission then issued a cease and desist order and a limited exclusion order to Analog. These orders, however, do not apply to products licensed by TI. Analog's sales to the extent of the annual sales of the original TI licensee are not subject to the remedy fashioned by the Commission.

We must affirm the Commission's choice of remedy so long as it is not arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law. In other words, "if the Commission has considered the relevant factors and not made a clear error of judgment, we affirm its choice of remedy." *Hyundai Elecs. Indus. Co. v. United States Int'l Trade Comm'n*, 899 F.2d 1204, 1209, 14 USPQ2d 1396, 1400 (Fed. Cir. 1990). Clearly, Analog's license with TI is a limited license. There is no guarantee that Analog will limit its importation of otherwise infringing devices to the amount permitted by its license. The Commission's decision to fashion a remedy that permits Analog

fully to enjoy its license and prevents Analog from violating section 337 can hardly be deemed a clear error of judgment.

Analog further contends that a member of the domestic industry is immune to remedial orders under section 337, and that the Commission therefore erred as a matter of law in subjecting it, as a member of the affected domestic industry, to section 337 orders. We must determine whether the Commission correctly construed the statute in rejecting Analog's novel contention.

Statutory interpretation begins with the language of the statute. *Mallard v. United States Dist. Court for S. Dist. of Iowa*, 490 U.S. 296, 300-01, 109 S.Ct. 1814, 1817-18, 104 L.Ed.2d 318 (1989). If the statute clearly expresses Congress's intent, we must give effect to the "unambiguously expressed intent of Congress." *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 843, 104 S.Ct. 2778, 2781, 81 L.Ed.2d 694 (1984). If we determine that Congress has not directly addressed the issue, then we must determine whether the Commission's construction of the statute is permissible. *Id.*

> Section 337 renders unlawful [t]he importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee, of articles that—
>
> > (i) infringe a valid and enforceable United States patent . . ., or
> >
> > (ii) are made, produced, processed, or mined under, or by means of, a process covered by the claims of a valid and enforceable United States patent[,]

provided that a domestic industry exists in the United States. 19 U.S.C. § 1337(a)(1)(B), (a)(2) (1988). A domestic industry exists in the United States if there is, with respect to the articles protected by the patent

(A) significant investment in plant and equipment;

(B) significant employment of labor or capital; or

(C) substantial investment in its exploitation, including engineering, research and development, or licensing.

19 U.S.C. § 1337(a)(3) (1988).

The plain language of subsection (a)(1)(B) prohibits the importation of articles found to infringe a valid and enforceable United States patent by any owner, importer or consignee. There is no suggestion in the statutory language that only owners, importers, or consignees not in the domestic industry are subject to the remedial powers bestowed on the Commission by statute. This language is clear and its meaning is unambiguous. Membership in the domestic industry does not operate to shield an importer such as Analog from the purview of section 337. Our duty, as was the Commission's, is to enforce the statute according to its terms.

Moreover, Analog's construction of the statute, if correct, would enable members of the domestic industry to engage in conduct that would otherwise be unlawful under section 337. When Congress amended section 337 of the Tariff Act of 1930 in 1988 to provide the definition of domestic industry now found in subsection (a)(3), it stated that its purpose was "to make [section 337] a more effective remedy for the protection of United States intellectual property rights." Omnibus Trade and Competitiveness Act of 1988, Pub.L. No. 100-418, § 1341(b), 1988 U.S.C.C.A.N. (102 Stat.) 1107, 1212 (codified at 19 U.S.C. § 1337 note). Analog urges us to hold that some members of the domestic industry may commit unfair trade acts against other law-abiding members of the domestic industry with impunity. Such a result would make section 337 a less, not more, effective remedy. We necessarily decline to rewrite the statute. Congress may, if it wishes, revise section 337 to provide the immunity Analog seeks. Until such time, the statutory domestic industry requirement will remain a jurisdictional prerequisite to Commission action under section 337, not, as Analog desires, a congressional pardon for unlawful conduct.

V. Conclusion

For the preceding reasons, the decision of the United States International Trade Commission to remedy a violation of section 337, predicated on its determination that the '027 patent is not invalid and is infringed by certain products made using an opposite-side gating encapsulation process is

AFFIRMED.

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

96-1003

Texas Instruments Incorporated,

Plaintiff-Appellant,

v.

Cypress Semiconductor Corporation, LSI Logic Corporation, and VLSI Technology, Inc.,

Defendants-Appellees.

ORDER

A combined petition for rehearing and suggestion for rehearing in banc having been filed by the **APPELLANT**, and a response thereto having been invited by the court and filed by the **APPELLEE**, and the petition for rehearing having been referred to the panel that heard the appeal, and thereafter the suggestion for rehearing in banc and response having been referred to the circuit judges who are in regular active service,

UPON CONSIDERATION THEREOF, it is **ORDERED** that the petition for rehearing be, and the same hereby is, **DENIED** and it is further **ORDERED** that the suggestion for rehearing in banc be, and the same hereby is, **DECLINED**.

The mandate of the court will issue on September 24, 1996.

FOR THE COURT,
FRANCIS X. GINDHART, CLERK

/s/Brian P. LeDuc
BRIAN P. LEDUC
ASSOCIATE CHIEF DEPUTY CLERK

Dated: September 17, 1996

RELEVANT STATUTES

19 U.S.C. § 1337. Unfair practices in import trade

(a) Unlawful activities; covered industries; definitions

(1) Subject to paragraph (2), the following are unlawful, and when found by the Commission to exist shall be dealt with, in addition to any other provision of law, as provided in this section:

(A) Unfair methods of competition and unfair acts in the importation of articles (other than articles provided for in subparagraphs (B), (C), and (D)) into the United States, or in the sale of such articles by the owner, importer, or consignee, the threat or effect of which is—

(i) to destroy or substantially injure an industry in the United States;

(ii) to prevent the establishment of such an industry; or

(iii) to restrain or monopolize trade and commerce in the United States.

(B) The importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee, of articles that—

(i) infringe a valid and enforceable United States patent or a valid and enforceable United States copyright registered under Title 17; or

(ii) are made, produced, processed, or mined under, or by means of, a process covered by the claims of a valid and enforceable United States patent.

(C) The importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee, of articles that infringe a valid and enforceable United States trademark registered under the Trademark Act of 1946.

(D) The importation into the United States, the sale for importation, or the sale within the United States after importation by the owner, importer, or consignee, of a semiconductor chip product in a manner that constitutes infringement of a mask work registered under chapter 9 of Title 17.

(2) Subparagraphs (B), (C), and (D) of paragraph (1) apply only if an industry in the United States, relating to the articles protected by the patent, copyright, trademark, or mask work concerned, exists or is in the process of being established.

(3) For purposes of paragraph (2), an industry in the United States shall be considered to exist if there is in the United States, with respect to the articles protected by the patent, copyright, trademark, or mask work concerned—

(A) significant investment in plant and equipment;

(B) significant employment of labor or capital; or

(C) substantial investment in its exploitation, including engineering, research and development, or licensing.

(4) For the purposes of this section, the phrase "owner, importer, or consignee" includes any agent of the owner, importer, or consignee.

(b) Investigation of violations by Commission

(1) The Commission shall investigate any alleged violation of this section on complaint under oath or upon its initiative. Upon commencing any such investigation, the Commission shall publish notice thereof in the Federal Register. The Commission shall conclude any such investigation and make its determination under this section at the earliest practicable time after the date of publication of notice of such investigation. To promote expeditious adjudication, the Commission shall, within 45 days after an investigation is initiated, establish a target date for its final determination.

(2) During the course of each investigation under this section, the Commission shall consult with, and seek advice and information from, the Department of Health and Human Services, the Department of Justice, the Federal Trade Commission, and such other departments and agencies as it considers appropriate.

(3) Whenever, in the course of an investigation under this section, the Commission has reason to believe, based on information before it, that a matter, in whole or in part, may come within the purview of part II of subtitle IV of this chapter, it shall promptly notify the Secretary of Commerce so that such action may be taken as is otherwise authorized by such part II.

If the Commission has reason to believe that the matter before it (A) is based solely on alleged acts and effects which are within the purview of section 1671 or 1673 of this title, or (B) relates to an alleged copyright infringement with respect to which action is prohibited by section 1008 of Title 17, the Commission shall terminate, or not institute, any investigation into the matter. If the Commission has reason to believe the matter before it is based in part on alleged acts and effects which are within the purview of section 1671 or 1673 of this title, and in part on alleged acts and effects which may, independently from or in conjunction with those within the purview of such section, establish a basis for relief under this section, then it may institute or continue an investigation into the matter. If the Commission notifies the Secretary or the administering authority (as defined in section 1677(1) of this title) with respect to a matter under this paragraph, the Commission may suspend its investigation during the time the matter is before the Secretary or administering authority for final decision. Any final decision by the administering authority under section 1671 or 1673 of this title with respect to the matter within such section 1671 or 1673 of this title of which the Commission has notified the Secretary or administering authority shall be conclusive upon the Commission with respect to the issue of less-than- fair-value sales or subsidization and the matters necessary for such decision.

(c) Determinations; review

The Commission shall determine, with respect to each investigation conducted by it under this section, whether or not there is a violation of this section, except that the Commission may, by issuing a consent order or on the basis of an agreement between the private parties to the investigation, including an agreement to present the matter for arbitration, terminate any such investigation, in whole or in part, without making such a determination. Each determination under subsection (d) or (e) of this section shall be made on the record after notice and opportunity for a hearing in conformity with the provisions of subchapter II of chapter 5 of Title 5. All legal and equitable defenses may be presented in all cases. A respondent may raise

any counterclaim in a manner prescribed by the Commission. Immediately after a counterclaim is received by the Commission, the respondent raising such counterclaim shall file a notice of removal with a United States district court in which venue for any of the counterclaims raised by the party would exist under section 1391 of Title 28. Any counterclaim raised pursuant to this section shall relate back to the date of the original complaint in the proceeding before the Commission. Action on such counterclaim shall not delay or affect the proceeding under this section, including the legal and equitable defenses that may be raised under this subsection. Any person adversely affected by a final determination of the Commission under subsection (d), (e), (f), or (g) of this section may appeal such determination, within 60 days after the determination becomes final, to the United States Court of Appeals for the Federal Circuit for review in accordance with chapter 7 of Title 5. Notwithstanding the foregoing provisions of this subsection Commission determinations under subsections (d), (e), (f), and (g) of this section with respect to its findings on the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers, the amount and nature of bond, or the appropriate remedy shall be reviewable in accordance with section 706 of Title 5. Determinations by the Commission under subsections (e), (f), and (j) of this section with respect to forfeiture of bonds and under subsection (h) of this section with respect to the imposition of sanctions for abuse of discovery or abuse of process shall also be reviewable in accordance with section 706 of Title 5.

(d) Exclusion of articles from entry

(1) If the Commission determines, as a result of an investigation under this section, that there is a violation of this section, it shall direct that the articles concerned, imported by any person violating the provision of this section, be excluded from entry into the United States, unless, after considering the effect of such exclusion upon the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United

States consumers, it finds that such articles should not be excluded from entry. The Commission shall notify the Secretary of the Treasury of its action under this subsection directing such exclusion from entry, and upon receipt of such notice, the Secretary shall, through the proper officers, refuse such entry.

(2) The authority of the Commission to order an exclusion from entry of articles shall be limited to persons determined by the Commission to be violating this section unless the Commission determines that—

(A) a general exclusion from entry of articles is necessary to prevent circumvention of an exclusion order limited to products of named persons; or

(B) there is a pattern of violation of this section and it is difficult to identify the source of infringing products.

(e) Exclusion of articles from entry during investigation except under bond; procedures applicable; preliminary relief

(1) If, during the course of an investigation under this section, the Commission determines that there is reason to believe that there is a violation of this section, it may direct that the articles concerned, imported by any person with respect to whom there is reason to believe that such person is violating this section, be excluded from entry into the United States, unless, after considering the effect of such exclusion upon the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers, it finds that such articles should not be excluded from entry. The Commission shall notify the Secretary of the Treasury of its action under this subsection directing such exclusion from entry, and upon receipt of such notice, the Secretary shall, through the proper officers, refuse such entry, except that such articles shall be entitled to entry under bond prescribed by the Secretary in an amount determined by the Commission to be sufficient to protect the complainant from any injury. If the Commission later determines that the respondent has violated the provisions of this section, the bond may be forfeited to the complainant.

(2) A complainant may petition the Commission for the issuance of an order under this subsection. The Commission shall make a determination with regard to such petition by no later than the 90th day after the date on which the Commission's notice of investigation is published in the Federal Register. The Commission may extend the 90-day period for an additional 60 days in a case it designates as a more complicated case. The Commission shall publish in the Federal Register its reasons why it designated the case as being more complicated. The Commission may require the complainant to post a bond as a prerequisite to the issuance of an order under this subsection. If the Commission later determines that the respondent has not violated the provisions of this section, the bond may be forfeited to the respondent.

(3) The Commission may grant preliminary relief under this subsection or subsection (f) of this section to the same extent as preliminary injunctions and temporary restraining orders may be granted under the Federal Rules of Civil Procedure.

(4) The Commission shall prescribe the terms and conditions under which bonds may be forfeited under paragraphs (1) and (2).

(f) Cease and desist orders; civil penalty for violation of orders

(1) In addition to, or in lieu of, taking action under subsection (d) or (e) of this section, the Commission may issue and cause to be served on any person violating this section, or believed to be violating this section, as the case may be, an order directing such person to cease and desist from engaging in the unfair methods or acts involved, unless after considering the effect of such order upon the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers, it finds that such order should not be issued. The Commission may at any time, upon such notice and in such manner as it deems proper, modify or revoke any such order, and, in the case of a revocation, may take action under subsection (d) or (e) of this section, as the case may be. If a temporary cease and desist order is issued in addition to, or in lieu of, an exclusion order under subsection (e) of this section, the Commission may require the complainant to post a bond, in an

amount determined by the Commission to be sufficient to protect the respondent from any injury, as a prerequisite to the issuance of an order under this subsection. If the Commission later determines that the respondent has not violated the provisions of this section, the bond may be forfeited to the respondent. The Commission shall prescribe the terms and conditions under which the bonds may be forfeited under this paragraph.

(2) Any person who violates an order issued by the Commission under paragraph (1) after it has become final shall forfeit and pay to the United States a civil penalty for each day on which an importation of articles, or their sale, occurs in violation of the order of not more than the greater of $100,000 or twice the domestic value of the articles entered or sold on such day in violation of the order. Such penalty shall accrue to the United States and may be recovered for the United States in a civil action brought by the Commission in the Federal District Court for the District of Columbia or for the district in which the violation occurs. In such actions, the United States district courts may issue mandatory injunctions incorporating the relief sought by the Commission as they deem appropriate in the enforcement of such final orders of the Commission.

(g) Exclusion from entry or cease and desist order; conditions and procedures applicable

(1) If—

(A) a complaint is filed against a person under this section;

(B) the complaint and a notice of investigation are served on the person;

(C) the person fails to respond to the complaint and notice or otherwise fails to appear to answer the complaint and notice;

(D) the person fails to show good cause why the person should not be found in default; and

(E) the complainant seeks relief limited solely to that person; the Commission shall presume the facts alleged in the complaint to be true and shall, upon request, issue an exclusion from entry or a cease and desist order, or both, limited to that person unless, after considering the effect of such exclusion or

order upon the public health and welfare, competitive conditions in the United States economy, the production of like or directly competitive articles in the United States, and United States consumers, the Commission finds that such exclusion or order should not be issued.

(2) In addition to the authority of the Commission to issue a general exclusion from entry of articles when a respondent appears to contest an investigation concerning a violation of the provisions of this section, a general exclusion from entry of articles, regardless of the source or importer of the articles, may be issued if—

(A) no person appears to contest an investigation concerning a violation of the provisions of this section,

(B) such a violation is established by substantial, reliable, and probative evidence, and

(C) the requirements of subsection (d)(2) of this section are met.

(h) Sanctions for abuse of discovery and abuse of process

The Commission may by rule prescribe sanctions for abuse of discovery and abuse of process to the extent authorized by Rule 11 and Rule 37 of the Federal Rules of Civil Procedure.

(i) Forfeiture

(1) In addition to taking action under subsection (d) of this section, the Commission may issue an order providing that any article imported in violation of the provisions of this section be seized and forfeited to the United States if—

(A) the owner, importer, or consignee of the article previously attempted to import the article into the United States;

(B) the article was previously denied entry into the United States by reason of an order issued under subsection (d) of this section; and

(C) upon such previous denial of entry, the Secretary of the Treasury provided the owner, importer, or consignee of the article written notice of—

(i) such order, and

(ii) the seizure and forfeiture that would result from any further attempt to import the article into the United States.

(2) The Commission shall notify the Secretary of the Treasury of any order issued under this subsection and, upon receipt of such notice, the Secretary of the Treasury shall enforce such order in accordance with the provisions of this section.

(3) Upon the attempted entry of articles subject to an order issued under this subsection, the Secretary of the Treasury shall immediately notify all ports of entry of the attempted importation and shall identify the persons notified under paragraph (1)(C).

(4) The Secretary of the Treasury shall provide—

(A) the written notice described in paragraph (1)(C) to the owner, importer, or consignee of any article that is denied entry into the United States by reason of an order issued under subsection (d) of this section; and

(B) a copy of such written notice to the Commission.

(j) Referral to President

(1) If the Commission determines that there is a violation of this section, or that, for purposes of subsection (e) of this section, there is reason to believe that there is such a violation, it shall—

(A) publish such determination in the Federal Register, and

(B) transmit to the President a copy of such determination and the action taken under subsection (d), (e), (f), (g), or (i) of this section, with respect thereto, together with the record upon which such determination is based.

(2) If, before the close of the 60-day period beginning on the day after the day on which he receives a copy of such determination, the President, for policy reasons, disapproves such determination and notifies the Commission of his disapproval, then, effective on the date of such notice, such determination and the action taken under subsection (d), (e), (f), (g), or (i) of this section with respect thereto shall have no force or effect.

(3) Subject to the provisions of paragraph (2), such determination shall, except for purposes of subsection (c) of this section, be effective upon publication thereof in the Federal Register, and the action taken under subsection (d), (e), (f), (g), or (i) of this section with respect thereto shall be effective as provided in such

subsections, except that articles directed to be excluded from entry under subsection (d) of this section or subject to a cease and desist order under subsection (f) of this section shall, until such determination becomes final, be entitled to entry under bond prescribed by the Secretary in an amount determined by the Commission to be sufficient to protect the complainant from any injury. If the determination becomes final, the bond may be forfeited to the complainant. The Commission shall prescribe the terms and conditions under which bonds may be forfeited under this paragraph.

(4) If the President does not disapprove such determination within such 60-day period, or if he notifies the Commission before the close of such period that he approves such determination, then, for purposes of paragraph (3) and subsection (c) of this section such determination shall become final on the day after the close of such period or the day on which the President notifies the Commission of his approval, as the case may be.

(k) Period of effectiveness; termination of violation or modification or rescission of exclusion or order

(1) Except as provided in subsections (f) and (j) of this section, any exclusion from entry or order under this section shall continue in effect until the Commission finds, and in the case of exclusion from entry notifies the Secretary of the Treasury, that the conditions which led to such exclusion from entry or order no longer exist.

(2) If any person who has previously been found by the Commission to be in violation of this section petitions the Commission for a determination that the petitioner is no longer in violation of this section or for a modification or rescission of an exclusion from entry or order under subsection (d), (e), (f), (g), or (i) of this section—

(A) the burden of proof in any proceeding before the Commission regarding such petition shall be on the petitioner; and

(B) relief may be granted by the Commission with respect to such petition—

(i) on the basis of new evidence or evidence that could not have been presented at the prior proceeding, or

(ii) on grounds which would permit relief from a judgment or order under the Federal Rules of Civil Procedure.

(*l*) Importation by or for United States

Any exclusion from entry or order under subsection (d), (e), (f), (g), or (i) of this section, in cases based on a proceeding involving a patent, copyright, or mask work under subsection (a)(1) of this section, shall not apply to any articles imported by and for the use of the United States, or imported for, and to be used for, the United States with the authorization or consent of the Government. Whenever any article would have been excluded from entry or would not have been entered pursuant to the provisions of such subsections but for the operation of this subsection, an owner of the patent, copyright, or mask work adversely affected shall be entitled to reasonable and entire compensation in an action before the United States Court of Federal Claims pursuant to the procedures of section 1498 of Title 28.

(m) Definition of United States

For purposes of this section and sections 1338 and 1340 of this title, the term "United States" means the customs territory of the United States as defined in general note 2 of the Harmonized Tariff Schedule of the United States.

(n) Disclosure of confidential information

(1) Information submitted to the Commission or exchanged among the parties in connection with proceedings under this section which is properly designated as confidential pursuant to Commission rules may not be disclosed (except under a protective order issued under regulations of the Commission which authorizes limited disclosure of such information) to any person (other than a person described in paragraph (2)) without the consent of the person submitting it.

(2) Notwithstanding the prohibition contained in paragraph (1), information referred to in that paragraph may be disclosed to—

(A) an officer or employee of the Commission who is directly concerned with—

(i) carrying out the investigation or related proceeding in connection with which the information is submitted,

(ii) the administration of a bond posted pursuant to subsection (e), (f), or (j) of this section,

(iii) the administration or enforcement of an exclusion order issued pursuant to subsection (d), (e), or (g) of this section, a cease and desist order issued pursuant to subsection (f) of this section, or a consent order issued pursuant to subsection (c) of this section,

(iv) proceedings for the modification or rescission of a temporary or permanent order issued under subsection (d), (e), (f), (g), or (i) of this section, or a consent order issued under this section, or

(v) maintaining the administrative record of the investigation or related proceeding,

(B) an officer or employee of the United States Government who is directly involved in the review under subsection (j) of this section, or

(C) an officer or employee of the United States Customs Service who is directly involved in administering an exclusion from entry under subsection (d), (e), or (g) of this section resulting from the investigation or related proceeding in connection with which the information is submitted.